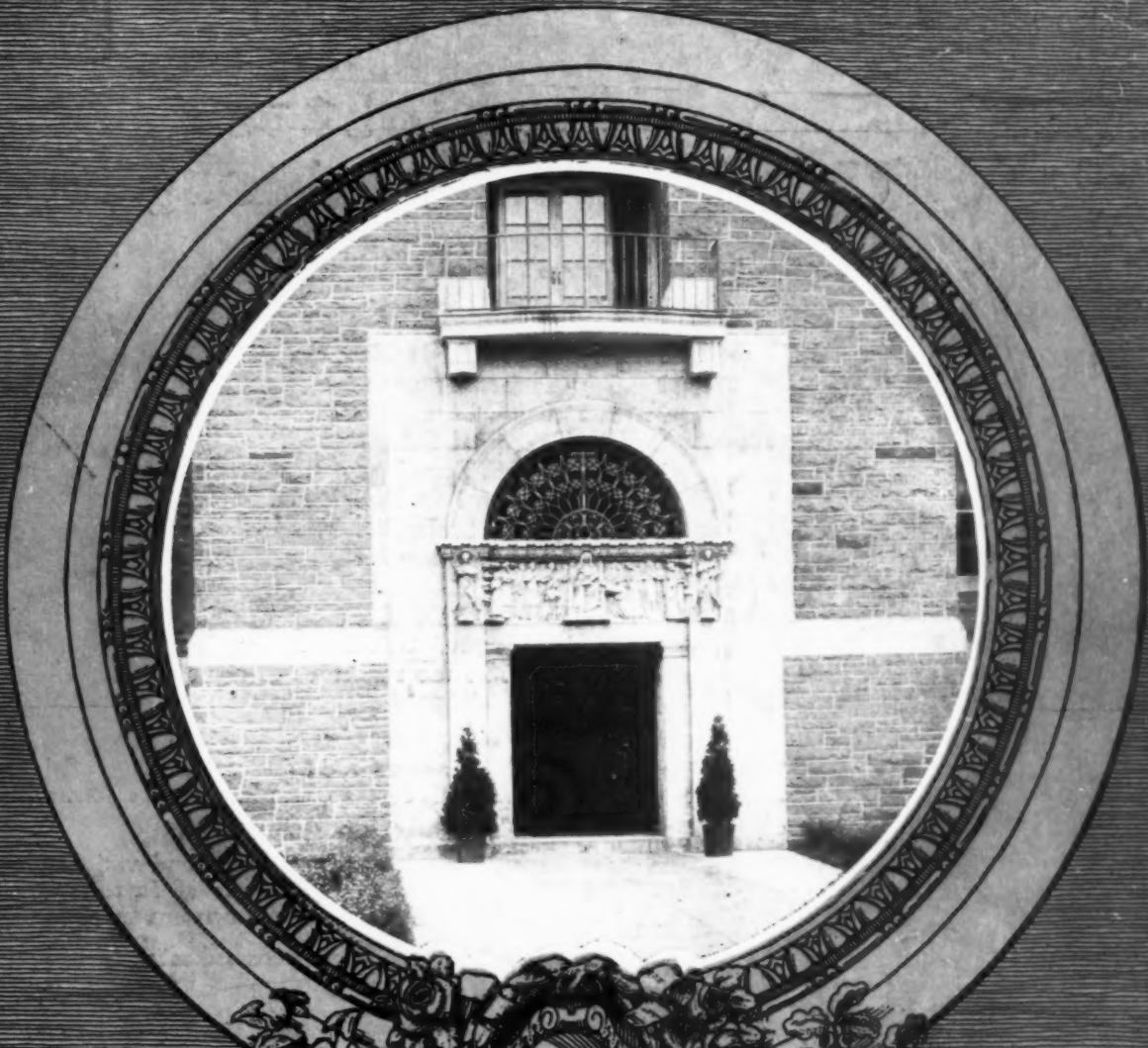


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*The*  
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March 1925

No. 3

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St. Luke's Hospital, Lafayette, Ind.  
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Barnes Hospital, St. Louis, Mo.  
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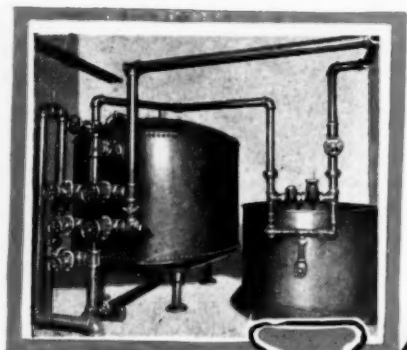
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# THE MODERN HOSPITAL

*A Monthly Journal Devoted to the Building, Equipment and Administration of Hospitals, Sanatoriums and Allied Institutions, and to Their Medical, Surgical and Nursing Services*

Vol. XXIV

March 1925

No. 3

## HOW MANY WARD PATIENTS NEED SEPARATE ROOMS?

By S. S. GOLDWATER, M.D., DIRECTOR, MOUNT SINAI HOSPITAL, NEW YORK; WITH THE COLLABORATION OF E. M. BLUESTONE, M.D., ASSISTANT DIRECTOR, MOUNT SINAI HOSPITAL, NEW YORK, N. Y.

THE segregation of ward patients, which is one of the most interesting, intricate, and persistent of administrative hospital problems, has an important bearing on hospital planning and construction.

In the hope of throwing more light on this question, the writer recently suggested to Dr. E.

proportion of "separation room cases" in the group studied, that is, patients whose separation from the larger ward group promised some tangible benefit either to the patients thus segregated, or to the patients from whose company the selected individuals were removed.

Before presenting the results of this study I



Proposed plan for the new Beth Israel Hospital group, Newark, N. J., of which Mr. Frank Grad is the architect, and Dr. S. S. Goldwater, the consultant. The central building is the main hospital building. Joining the main building on the left is the medical service building; the right arm of the main axis is the kitchen building. In the foreground is the dispensary which connects with the medical service building. The building at the extreme right is the nurses' home.

M. Bluestone, assistant director of Mount Sinai Hospital, that a fresh approach to the question be made through an actual study of the requirements of a definite group of ward cases. The aim of the proposed study was to determine the

shall take the liberty of restating certain views on the "single-room hospital," which were originally presented in an editorial in *THE MODERN HOSPITAL*,\* in the hope of correcting certain mis-

\*Vol. XVIII, No. 3, March, 1922, pp. 233-234.

conceptions which seemed at that time to be spreading.

"Whether one approves or not of the proposal that all patients be installed in single rooms, and that the open or congregate ward for the care of the indigent sick be abolished, it is reasonable to assume that a demand for so radical a change in hospital practice would never have arisen if unmitigated large wards were perfectly adapted to the care and treatment of all classes and conditions of hospital patients at all times.

"The value and function of the quiet or separation room has in fact been recognized in hospital literature and practice for considerably more than a generation; but whereas one or perhaps two quiet rooms, attached to a ward unit of twenty-five or thirty beds, were considered sufficient forty years ago, and while twice that number would have been regarded as acceptable twenty years ago, it has remained for hospital idealists of the past decade to voice a demand for a separate room for every patient, regardless of medical or social classification, cost of service, or any other consideration.

"Those who have participated in the planning, erection and management of hospitals designed in whole or in part for private patients, and experienced hospital officials generally, will not, I think, underestimate the values that inhere in single rooms. On the other hand, experience has shown the heavy cost, particularly under the conditions now existing, of that type of construction, and one cannot conscientiously disregard the lessons of experience. There are, of course, plans and plans, and hasty generalizations in regard to cost are apt to be misleading, but it is not a hasty generalization which declares that more material and more labor enter into the construction of a hospital of a given capacity, in which separate rooms of suitable size with corridors between are assigned to all patients, than enter into the making of one in which a considerable proportion of the patients are lodged in open wards.

"It may be assumed that all experienced hospital men favor the use of single rooms, first, for all patients who desire and who can afford to pay for them and for the additional service which is indispensable for their proper care; and second, for all patients who need single rooms and individual service, whether they can afford to pay for them or not.

### Do All Patients Need Single Rooms

*"The real point at issue is whether or not all patients do need single rooms."*

In the past, this question has been answered in general terms, reflecting the vague impressions, the uncritical opinions, the sympathies, the personal experience or the economic or sociological views of those who have written upon it. This study presents, so far as I know, the first answer based upon the ascertained needs of a concrete hospital service.

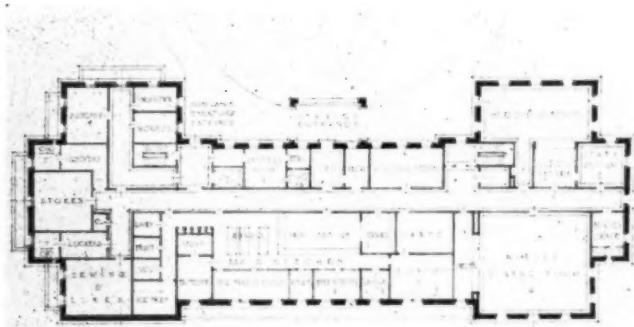
For the figures which follow I am indebted to Dr. Bluestone, who, in estimating the need of in-

dividual patients, was assisted by members of the house staff of Mount Sinai Hospital, to whom thanks are likewise due. The judgment which determined the need and classification of each patient is, therefore, a group judgment, formed in circumstances which favored the reduction to a minimum of the personal prepossessions of individuals.

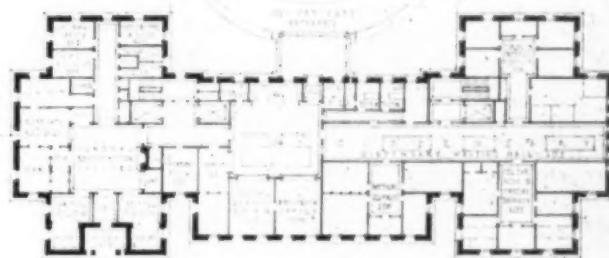
As a preliminary to the proposed study, it was necessary to agree upon reasons which were regarded as sufficient to justify the placing of an indigent patient in a separate room. The question of the cost of individual care was not permitted to influence the decision of the judges who sought to consider only the welfare of patient and fellow patients. The needs or condition of patients falling within the following classification were held to be sufficient ground for segregation:

### Types of Cases Requiring Separate Rooms

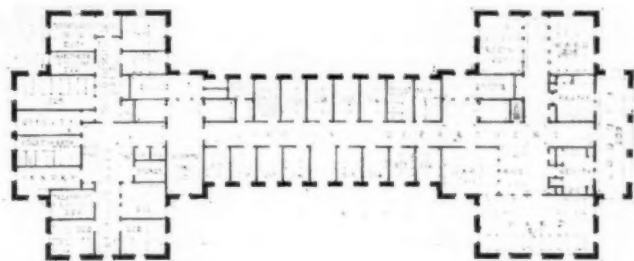
1. Dangerously sick cases  
Cases where death is imminent
2. Mental and nervous diseases  
Delirium  
Psychosis  
Neurosis  
Insomnia
3. Special diseases  
Graves' disease  
Acute chorea  
Pneumonia  
Severe hemorrhage
4. Communicable or suspected contagious disease  
Typhoid  
Erysipelas  
Malaria  
Gonorrheal diseases  
Tuberculosis  
Exanthemata
5. Foul dressing and discharge cases  
Lung abscess  
Colostomies  
Incontinence  
Diarrheas
6. Disciplinary cases  
"Bad habit" cases  
Prisoners
7. "Social reason" cases  
Sensitive patients of unusual refinement
8. Uncontrollable pain cases
9. Cases for concentrated treatment  
Tracheotomy  
Various
10. Cases in which light, heat and sound stimuli should be controlled ("absolute quiet" cases)



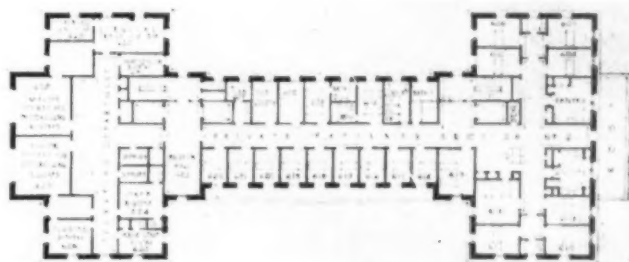
Basement plan showing the kitchen, dining room and the emergency department.



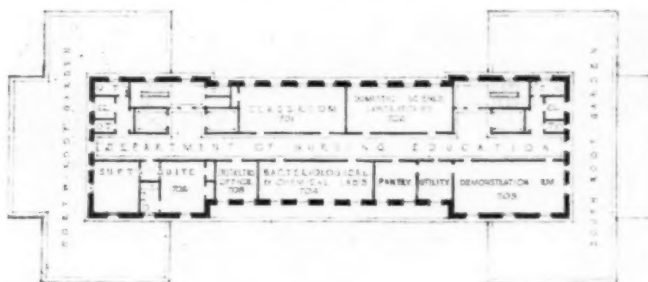
First floor plan showing the administration and out-patient department.



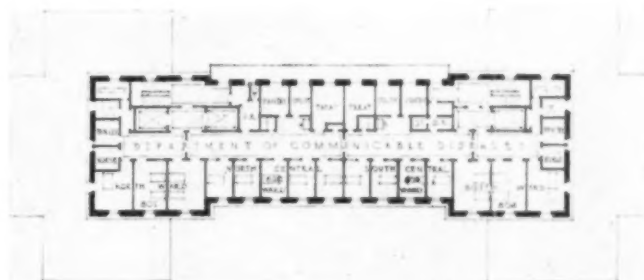
Second floor plan showing surgical department, receiving ward, tonsil and adenoid ward.



Sixth floor plan showing operating department and private patient's section No. 2.



Seventh floor plan showing department of nursing education and superintendent's suite.



Eighth floor plan showing department of communicable diseases.

The third floor is similar to the second except that the left-hand section is devoted to the interns' living quarters. The fourth floor is also similar except that the left-hand section is taken up with the x-ray, physiotherapy, electrotherapy and dental departments. The fifth floor is similar to the sixth floor and is devoted to private patients except that the section below the operating department is given over to laboratories. In the sub-basement are located the laundry, carpenter and paint shops, storage rooms and power plant, and refrigerating plant. The scale for the above plans is approximately 1" to 67'.



## 11. Early post-operatives

Five-hundred patients were examined as candidates for segregation, cross-sections of the several clinical services being taken at intervals, over a period of four months.

## Analysis of 500 Cases

## A. Clinical Grouping of All Cases

	No.	%
1. General medical.....	273	55
2. General surgical.....	167	33
3. Gynecological .....	28	5.6
4. Neurological .....	32	6.4
	500	100

## B. Analysis According to Condition of Patient

1. Dangerously Sick .....	5	1
2. Active .....	285	57
3. Convalescent .....	196	39
4. Chronic .....	14	3
	500	100

## Small Per Cent Need Separation Rooms

It was found that 72 patients out of the 500 examined belonged in the "separation room" class. This number equals 14.4% of all the patients examined, or 25% of the "active" cases among those examined.

## C. Clinical Grouping of "Separation Room" Cases

	Total	Room	Cases	%
1. General medical.....	273	37	13.5	
2. General surgical....	167	18	10.8	
3. Gynecological .....	28	7	25	
4. Neurological .....	32	10	31	
	500	72		

## D. Analysis of all "Separation Room" Cases

1. Dangerously sick cases.	5
2. Psychoses (transient).	12
3. Neurosis .....	1
4. Insomnia .....	1
5. Pneumonia .....	5
6. Graves' disease.....	1
7. Erysipelas; malaria...	2
8. Gonorrheal diseases ..	2
9. Typhoid .....	1
10. Tuberculosis .....	10
11. Foul sputum .....	4
12. Incontinence .....	1
13. Colostomy .....	1
14. Disciplinary .....	1
15. Social reasons .....	5
16. Uncontrollable pain ...	1
17. Concentrated treatment	3

18. "Absolute quiet" cases. 5

19. Early post-operatives..11

72 14.4% of total  
(25% of all "active" cases)

It is necessary to distinguish between the motive for and the effect of clinical segregation. To discover a reason for the segregation of a ward patient is one thing; to do justice to the segregated patient is another. While the hospital architect is primarily concerned with the required number of separation rooms, the hospital administrator must go a step further; it is for him to consider, in terms of personnel and expenditure, all that logically follows the removal of a patient to an isolated room; the comfort of the patient will not be enhanced, nor his safety promoted, unless additional hours of service are devoted to his care. I refrain from enlarging upon this phase of the matter, inasmuch as the present article is written chiefly from the standpoint of hospital planning or the proper utilization of hospital space.

It is hoped that parallel studies will be instituted in other hospitals, so that conclusions drawn from wide experience may become available for the guidance of hospital architects.

## GRASSLANDS HOSPITAL ADDS PERSONNEL AND RECREATION DEPARTMENT

Grasslands Hospital, the public general hospital of Westchester County, N. Y., has recently created a new department to be devoted to personnel and recreation work among employees. The new "Director of Recreation and Personnel" is Miss Mary E. Stevens who is experienced in recreation, settlement, and personnel work. The new department has been organized with the belief that it will eventually pay its own way by reducing labor turnover, improving the health of employees, providing suitable recreation and exercise, and by adjusting employees' individual problems. This work will include all departments excepting nurses' training school.

One of the most important fundamental requirements of any hospital that claims to be an agency of scientific medicine is that it shall be open only to those physicians adequately educated in the fundamental medical sciences.

Few human passions are stronger than vanity, and there are not many men whose love of truth is so compelling that they can stand up and confess to their fellows that the studies to which they have devoted many years are futile.—Major Greenwood in *The Lancet*.

We nestle in nature, and draw our living as parasites from her roots and grains, and we receive glances from the heavenly bodies, which call us to solitude, and foretell the remotest future.—Emerson.

Together the two professors of medicine and nursing must work forward in the mutual control of educational and hospital standards.—Wilbur.

## HOSPITAL BUILDING IN 1925: A FORECAST

BY C. STANLEY TAYLOR, DIRECTOR OF RESEARCH, THE ARCHITECTURAL FORUM, NEW YORK, N. Y.

THE year 1924 witnessed the greatest volume of new construction ever recorded in the hospital building field. An examination of the accompanying chart which shows comparative monthly expenditures for new construction in the hospital field during the last four years, indicates that this type of work proceeds in a most consistent manner without any great annual fluctuation in the volume of new buildings.

The prospect for hospital building in 1925 would indicate a volume of new construction approximately equal to that of the record-breaking year of 1924. The comparative percentages of interest in 1924 and 1925 in hospital building are indicated in the fourth annual survey and forecast of the *Architectural Forum* for six geographical divisions of the United States, as follows:

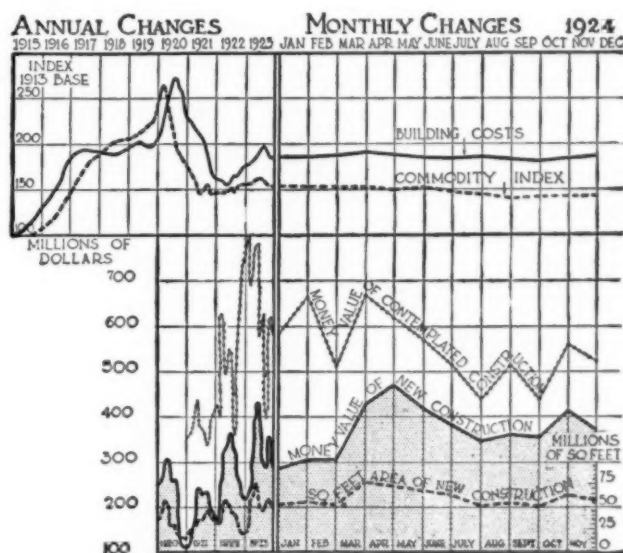
In 1924 in the Northeastern states, 3.4 per cent of the total building forecast was represented by hospitals. In the 1925 forecast 3.3 per cent is the proportion which promises to be the volume of hospital building in the Northeastern states. In the North Atlantic states there evidently will be a slight decrease in the total of hospital building, as the 1924 proportion was 5.7 per cent and 1925 forecast shows 4.9 per cent. Slight decreases are shown in the Southeastern states where the 1924 figure was 3.4 per cent and the 1925 figure is 2.8 per cent. Also in the Southwestern states, where the 1924 figure was 6.9 per cent and the 1925 figure is 5.6 per cent. In the Middle West states the 1924 figure was 6.2 per cent while the 1925 figure is 3.9 per cent. In the Western states a considerable increase in hospital building activity is promised, the 1924 figure being 4.6 per cent and that of 1925, 6.7 per cent. For the entire country hospital building represented five per cent of the total in 1924 and in the 1925 forecast represents 4.5 per cent of the total.

As the forecast for the past three years has been within 3 per cent accurate, it is evident that

this scientific prediction as to the 1925 activity may be very seriously considered. Hospital planning and construction have, during the past few years, developed into one of the most interesting of the general building types. With progress in medical science and with the public and private support of institutions of this type has come an amazing development in the size and number of new hospital units, established in various sections of the country.

The average hospital building project today is approximately ten times as large as the average

similar structure built fifteen years ago. Such buildings have been vastly complicated because of their increased size and because of the advance of medical science, including the development of an extensive variety of treatments and of modern surgical and sanitary equipment. Aside from the functional planning and equipment factors, a number of new elements have entered into the hospital building problem. The architecture of hospitals has become



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The accompanying chart indicates that building costs have remained fairly stable during 1924 and, with the exception of some seasonal fluctuations, it is anticipated that costs will remain well stabilized during 1925.

a serious factor. No longer are these buildings of the grim, barracks type, but primary interest is shown in establishing pleasant attractive buildings, well located and designed to create a pleasant external and internal atmosphere. Perhaps it is a recognition of the psychological benefit on the part of the patient and the patient's friends and relatives which has influenced this change. Again, there are the definite elements of community pride in fine institutions and also the development of a large number of private and semi-private hospitals where the design of the buildings is considered from an income-producing basis and where patients are considered as clients whose selection of the private institution may be partially influenced by its attractiveness. Regardless of the underlying causes, it is certain that within the past four or five years some of the new hospitals are represented among the finest contributions to good architec-

ture in the United States.

In the modern hospital building the requirements for materials, equipment and workmanship represent the highest degree of quality and excellence. The buildings must be well designed to meet both practical and esthetic requirements. The selection of materials must be for long life, low depreciation and a high degree of fire resistance. Similarly, with mechanical and surgical equipment, the hospital demands the best. This is particularly true of structural mechanical equipment such as pipes, ventilators, heating apparatus, because the hospital does not want the expense or disturbance of repairs and replacements.

This article would not be complete without recording one extremely interesting development in connection with the planning of hospitals. Heretofore, it has been the usual custom for the hospital officials to discuss the problem of the new building with an architect, whereupon the first sketch plans would be drawn and an attempt made to fit the various functional requirements of the hospital to the limitations prescribed by the general layout of the building. Today, a new system of preliminary work is changing this entire method of developing the architectural plan. The first step might be called the development of a planning report. Under this system no plan is made for the building itself until a comprehensive unit analysis has been made covering the full requirements of each department of the hospital. Here the architect is in consultation with all interested officials and physicians and for each special room an individual plan is developed with a list of interior finishes and the desired mechanical equipment. This room is planned for an ideal size, regardless of the ultimate size of the building. Only when all of the various special rooms, public rooms, private rooms and other units of the plan have been independently determined and theoretically equipped and furnished, does the architect start his first layout of the building. This analytical report makes it possible for him to assign certain percentages of space to each of the different divisions of the plan. While in the final plan it may not be possible to allow as much room as desired for some departments, it is nevertheless

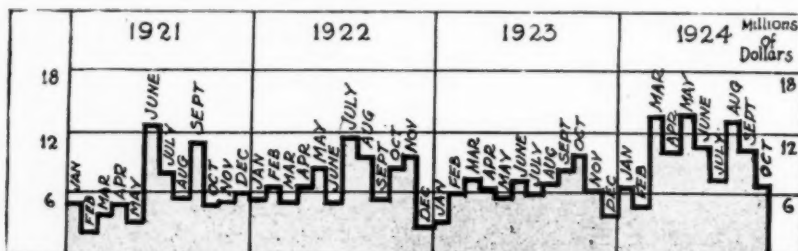
possible to establish a fundamental relationship for all departments both from the viewpoint of dimensions and that of relative location.

Before the architect attempts the development of his plan this comprehensive report is analyzed by all interested parties and when the building is finally laid out on the architect's boards, it represents a scientific interpretation of the requirements of this specific institution and practically guarantees a building which will be thoroughly efficient for the purpose to which it is devoted.

This method of preliminary analysis is highly recommended to hospital officials and to architects, because it definitely provides against costly errors and the dissatisfaction

which must arise through failure to anticipate correctly the needs and interrelationship of various departments and functions of the hospital.

During the year 1925 it is evident that throughout the United States well over \$300,000,000 will be spent for materials, equipment and labor represented by new hospital buildings. In addition to this, probably another \$20,000,000 will be spent in the remodeling of old hospital buildings. These figures, together with the interesting developments in the hospital field, indicate that this is one of the most important of the special building types. The cost of some of the proposed hospital groups now being planned run as high as \$10,000,000.



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Graphic record of the monthly investment in HOSPITAL and INSTITUTIONAL buildings during the four years 1921 to 1924

As may be seen from the accompanying chart, the building of new hospitals seemed to maintain an average pace during the three years, 1921, 1922 and 1923. The year 1924 shows at least three record-breaking months in the hospital field which were due to a tendency toward the construction of extremely large and expensive hospital units, and many more of these are to come in 1925, judging by preliminary reports and plans filed within the last two months.



The above picture shows a group of boy scouts ready to distribute posters and other publicity matter in the campaign recently conducted by the Knickerbocker Hospital, New York, N. Y.



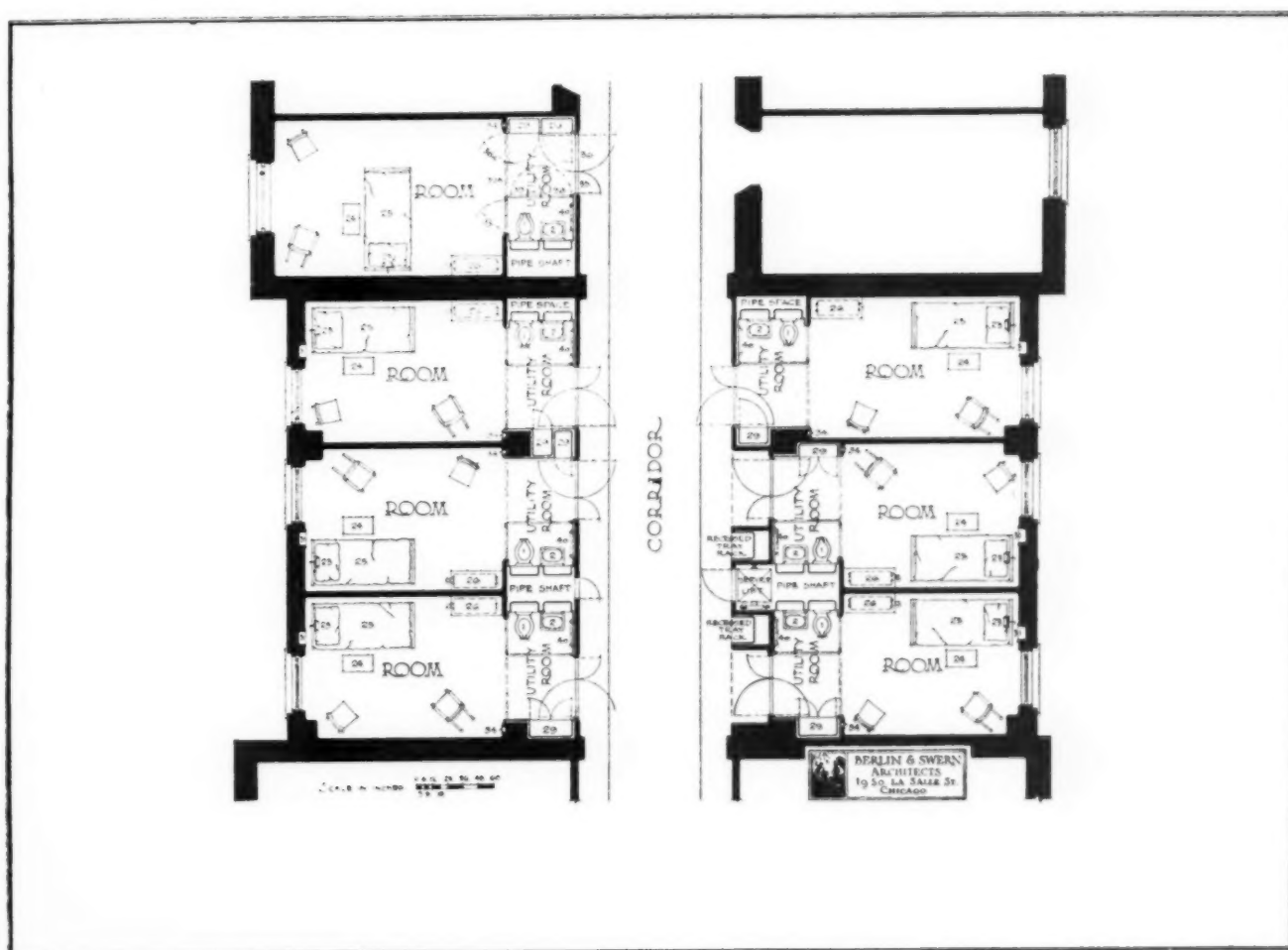
## PRESBYTERIAN HOSPITAL, CHICAGO, ADDS NEW UNIT OF "BACON PLAN" ROOMS

**T**HE Presbyterian Hospital, Chicago, Ill., will, in a few months, open a new addition which will contain a group of small private rooms, each of which is equipped with individual utilities. The idea of the room is not new, and many readers will remember Mr. Bacon's suggestions made on the floor of the 1916 American Hospital Association's convention in Philadelphia, Pa. Since then much research work has been done, materials tried, and step by step the unit has been

improved until simplicity of operation, economy of construction, and speedy erection have been perfected.

Hospital planners and executives will be interested in the outstanding advantages that these rooms provide:

1. Sound-proof: Corridor noises can be cut off from the patients and noisy patients can be isolated so as not to disturb others. Results: decreased use of narcotics.



Typical floor plan, new unit, Presbyterian Hospital, Chicago, Ill.

1. Wall hung water closet.
2. Wall hung lavatory.
3. Flushing valve for water closet.
4. Emergency nurses' call switch.
5. Stupe wringer hooks.
6. Hot water control valve.
7. Cold water control valve.
8. Drinking water faucet.
9. Swivel spout for water for lavatory and for washing bedpans.
10. Recessed toilet paper holder.
11. Recessed soiled towel holder.
12. Wash basin hung on inside of case door.
13. Shelf for specimen bottle.
14. Bedpan.
15. Urinal bottle.
16. Equipment cleaning brush.
17. Hot water bag.
18. Electric light for utility rooms.
19. Electric plug for heating equipment.
20. Mechanical ventilation.
21. Nurses' call light in corridor.
22. Inside screen attached to window and arranged to prevent patients from jumping out.
23. Adjustable bed lamp.
24. Bacon nursing table.
25. Bed.
26. Radiator enclosure.
27. Strap hanger for patients to adjust themselves in bed.
28. Suspended ceilings (for soundproofing).
29. Recessed metal lockers.
30. Nurses' call switch.
31. Metal recess for telephone.
32. Recess for ringing box.
33. Extension cord plug for doctor's examining lamp, additional reading lamp, or electric heating pads.
34. Switch controlling room illumination.
35. Small door to corridor to be open when taking in and out beds and stretcher carts.
36. Double acting door—room to corridor.
37. Patients' access door to utilities from rooms.
38. Nurses' access door to utilities from corridor.
- 38-A. Nurses' access door to room in second position.
39. Door closing off utilities.
- 39-A. Door closing off utilities in second position, forming isolation vestibule between room and corridor.
40. Towel and wash cloth bars.

2. Simplifies nursing: Cuts down the walking of nurses and increases the efficiency of their time thirty per cent. Results: Floor nurses spend more time with their patients, eliminating the necessity of special nurses in many cases.

3. Provides privacy for patients: Toilet facilities within eight feet of patients. Results: Patients use them more freely and thus reduce the number of calls for bedpans, drinks of water, etc.

4. Reduces furniture required: Arrangement of doors eliminates movable bed screens; utility cases and lockers eliminate the necessity of dressers. Results: Decreases cost of maintenance, laundry, maid service, and cuts down operating costs.

5. Safeguards patients: The window with screen makes jumping out possible only by destroying the screen frame or window sash, and the doors can be locked around the utilities. Result: Irresponsible patients are fully protected.

6. Eliminates cross infection: Patients use their own equipment, which does not need to be taken from the room during the stay of the patient. Results: Eliminates irksome sterilizing required where common utilities are used, and eases the patient's mind on the question of infection.

7. Simplification of plumbing: A minimum number of faucets, etc., and no fixtures on the floor. Results: Decreases amount of maid service and makes cleaning possible without disturbing the patients.

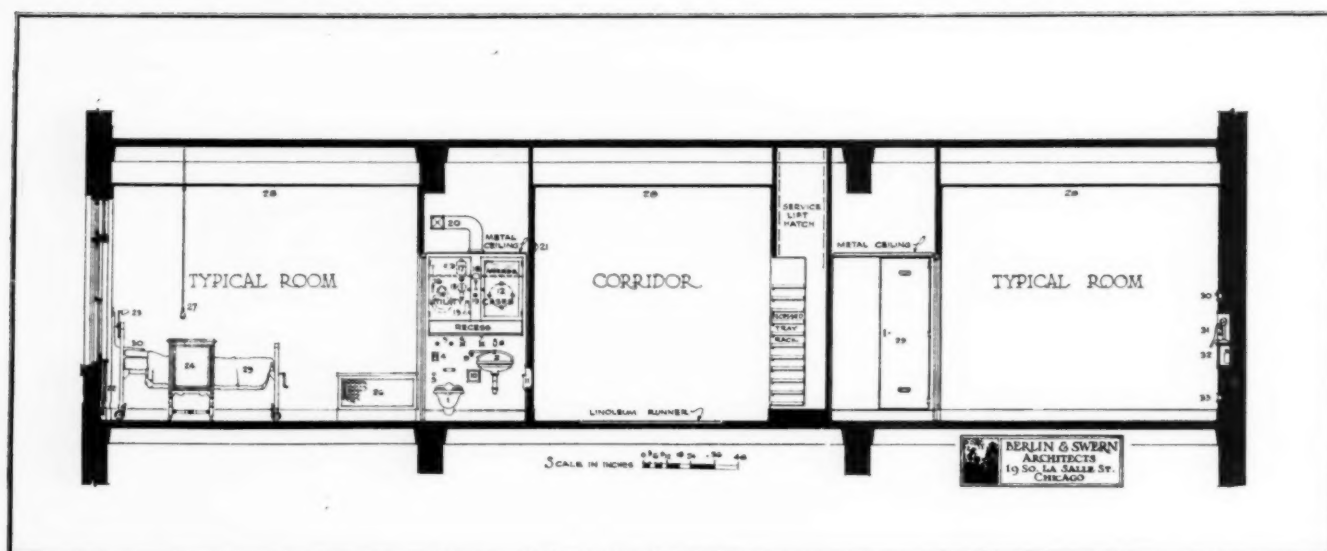
8. Decreases cubic contents: Compactness and construction arranged to make every cubic foot of building useful. Results: No waste space and lower building cost per bed.

9. Decreases nursing radius: Brings all patients relatively closer to the nursing center and shortens corridors. Results: Nurses can answer more calls and the time interval is less between call and answer; also reduces building costs.

10. Eliminates problem of visitors: The varied arrangement of doors makes the handling of visitors simple, and eliminates disturbance of very sick patients. Results: A flexibility of visiting hours suited to the individual patient.

11. Increases percentage of occupancy: The similarity of facilities, and the fact that each room can be used for man, woman, or child, medical, surgical, obstetrical, or even contagious cases on floor care, simplifies the room clerk's problems. Results: A 100-bed hospital can do as much

(Continued on page 241)



Section through new typical Bacon plan rooms.

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2. Wall hung lavatory.
3. Flushing valve for water closet.
4. Emergency nurses' call switch.
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40. Towel and wash cloth bars.

## HOW NOT TO SELECT THE ARCHITECT

By HOWELL TAYLOR, BENTLEY, TAYLOR AND SALISBURY, ARCHITECTS, CHICAGO, ILL.

NOT long ago when a young father who had recently come from Mediterranean shores, stepped into the premature department of the New York Nursery and Childs' Hospital, and asked to see his "amateur baby," he suggested a term which can be applied to many a worthy hospital project left on the rocks of misspent promotional effort. When such a hospital is allowed to flounder into actual being we find the new superintendent tearing his hair to make both ends meet and a board of directors wondering why their pretty new building is so expensive to operate.

The reason is clear—the building is simply an amateur baby who never had a real chance and lacks an adequate premature department which can give it an equal opportunity with the little Mediterranean youngster. Sad it is that the fault lies not with the building itself but with the well-intentioned board of directors who knew "all about hospitals because their wife's aunt used to be a superintendent."

### Wise Planning Birthright of Hospital

It is unfortunate, indeed, that there is many a group of earnest, intelligent, altruistic people, who are willing to spend a prodigious amount of time and money to make a "go" of some much needed hospital when their method of preliminary attack is basically wrong. Too often they write disaster into the preamble of their purpose by not getting intelligent advice on hospital building.

When we break our watches we take them to an expert jeweler; when we run down an iron traffic post we seek solace from a garage man; when we imbibe too freely of some neighborly home brew and shoot up the town, we engage a competent lawyer to keep us out of jail; but how

often it happens that when we decide to coax \$250,000 out of the jeans of the *populi* and build a hospital, we hire Uncle Henry, from Oskaloosa, who built a "beautiful church on Main Street."

### Extravagance of Incompetent Architects

There are certain similarities between churches and hospitals, just as there are between men. Both have walls, floors, roofs, heating plants, and front door steps. But it is safe to say that Uncle Henry's solution will be a real amateur baby—and this is said with all respect to Uncle Henry, for he is a most necessary member of society. He has his field and a worthy one it is, too; but why give him a job he knows nothing about? However good his intentions may be, he will waste time and money, and the board will continue to pay for his inexperience as long as the building stands. Even so, these statements must not be considered as a criticism of any board of directors, but rather as a frank estimate of a condition which needs the attention of every person who contemplates employing an architect. There is so much loose thinking and talking about efficient professional service that the most careful analyses become necessary in choosing professional men.

Just what are all the important things to consider in selecting an architect, and what qualifications should an architect have in order to plan a hospital which will be an asset instead of a liability? It is sometimes hard for the layman to understand why one building may be good for one purpose and wholly unfitted for another, why it is so easy to add a burden of overhead expense to one building under some conditions which may be entirely eliminated if the building is used in another way under other conditions.

It is not hard to see how this may be true, how-



Broadlawn, Polk County's Public Hospital, Des Moines, Iowa, which erected a new 40-bed addition last year. It was designed by Proudfoot, Bird and Rawson, Des Moines, Iowa.



ever, when it is realized that any building exists only for the purpose of housing some human activity. The more complex this activity and the more dependent its success upon a careful analysis of the operations which must go on under its roof, just so much more care must be expended on its plan and arrangement to see that every door and window and every piece of equipment is in such a place that no portion of the routine operation of the building will be interrupted or delayed or made more difficult because of some structural obstacle.

### Special Problems of Hospitals

The designing of a hospital is recognized as the most difficult problem that can be offered the architect, for it embraces many individual problems which have in themselves become established fields of architectural endeavor. They include (1) housing of a large number of people under one roof, (2) feeding the same number with the most carefully prepared foods, (3) laboratories, operating departments and training school facilities, beside which similar equipment of a college presents a meager array, (4) church planning and building (for to many hospitals are attached large chapels which involve an extensive knowledge of this type of structure), (6) the providing for administration of the building so that access to departments and facility of handling crises will be absolutely without friction, (7) and finally, the fact that all service and equipment of a hospital must cater to the comfort of persons who are laboring under strained mental conditions and are less likely to make allowances for chance discrepancies.

With these conditions in mind, it is unreasonable to suppose that the architect who lacks practical hospital experience can design a good hospital unless the client is willing to let him practice more or less with his time and money. It is true that the able practitioner, who is a novice at hospitals, will make sufficient investigation and study his problem long enough to insure a building that does not violate general practice, but his knowledge of minute details in technique and workable equipment will certainly be limited.

### First Problem Before a Hospital Board

This presents the first big question to the hospital boards seeking an architect, which, epitomized, reads—"Shall we cater to local friendships, engaging perhaps an able enough man who has little real knowledge of his problem, or shall we seek the best in the country and be assured that our building will be an asset instead of a possible liability?" That is rather bald perhaps, but it states the case. In the hospital field, as in every

other, there is a small group of architects who stand at the top. They are doing the bulk of hospital work in the United States and a large percentage in other parts of the world. Others are followers who pick up an occasional commission through some local connection, often of necessity, seeking consultation or association with one of the "top-notch" group when they find themselves staggered by the intricate nature of the problem confronting them. These men are not at the top through any preconceived plan to corner all the hospital commissions but because they have learned how to design good hospitals through years of conscientious study. It is gratifying to note that through association or from the establishment of new offices by former members of the staffs of well-known hospital architects, the field of able practitioners is gradually widening.

The pitfalls of hospital design are too many and the price that must be paid too high to allow guess-work. It must be remembered that those who seek improved health through the ministrations of a hospital go there reluctantly. A hospital is treating patients, not "cases." It is not a laboratory, but a human institution where kindness and the highest sense of altruistic effort must govern. Therefore, if he is to design successfully, the architect should have a clear concept of the basic ideals for which a hospital exists.

In considering the machinery of selection, let us hope that the old bubble of unrestricted competition is exploded—the prevailing idea that architects had plans instead of service to sell—although there are today many evidences that laymen do not recognize the professional nature of practicing architecture. It would be just as reasonable for a prospective client to ask several lawyers to compete for handling his case, as it is for a client to ask architects to "submit plans."

### Basis for Selecting Architect

If good architectural service is wanted for a proposed building, ample time must be allowed to study the professional ranks—the building committee will do well to see what the profession has to offer in detail. Every client is apt to think his problem is a sort of specialized, "different" affair, the like of which was never seen before—but usually it is not. There are intelligent architects somewhere within sound of the call of every hospital board, which is able to spend building funds wisely. If a large enough group cannot be located so that sufficient basis for comparison is offered, a letter to the editor of THE MODERN HOSPITAL or to an architectural bureau will bring immediate help.

When ten or twenty such architects have been found, the committee should satisfy itself that these men are doing the most acceptable work of this nature in the country, then require them to describe what they have done and what they are able to do. They should also require them to describe the organization of their offices and former connections and tell how this particular building will be handled from the time an agreement is made until the job is finished. The committee should study an architect's methods and make a thorough, not a cursory investigation. It is well not to take the word of any one. The investigating committee should ask questions by the score, and expect the architects to give advice but not to make free sketches, and should even look askance at those who offer to do so. It is putting the cart before the horse. If a building committee is looking for intelligent preliminary service, it will seldom be obtained in free sketches. How does

one make up his mind about the garage man he hires or the lawyer he retains. He doesn't ask them to "submit sketches."

### Two Methods of Selection

When a real investigation of the architects who are able to handle the job has been made, and the best there are have been found, then the means of selection may be considered. There are but two besides the absurd open competition mentioned above (an arrangement reputable architects will not enter): First, the restricted competition accorded to American Institute\* rulings, in which the competitors are invited to submit drawings and paid a fixed sum for them, or the general unpaid competition in which all who enter agree to follow the American Institute program. The former will sometimes attract the best practitioners while the latter will attract only younger men

\*American Institute of Architects, Washington, D. C.



The new Receiving Hospital, Detroit, Mich., designed by Carey and Esselstyn, Detroit.

who are seeking a place for themselves in the professional field. More often, however, the "top-notchers" refuse to enter any competitions, because so many elements appear which tend to make them unfair in spite of the unusual care with which they are conducted.

### The Direct Method of Selection

The second method involves direct selection. This is by far the most desirable and results always in the best solution of a hospital problem. In most projects the architect can obtain a comprehensive idea of the subject only through considerable cooperative study with his clients. It is impossible to do this in a competition. Unconsciously, presentation of the drawings becomes a too important element since every effort at a showing that will attract attention is made. A jury consisting of architects and experts with a broad and discriminating knowledge of hospitals and building construction must be engaged and paid if the assurance is to be had that the best drawings will be chosen. If the project is a large one, each invited competitor (when he accepts at all) must be well paid for his work. If the project is not large, no important practitioner will enter.

A competition will delay the final selection of an architect from six months to one year, will involve the expenditure of several thousand dollars and will not insure, by any means, that in the end the best solution is found. Invariably the winner finds it necessary to restudy all of his work and make other, sometimes totally different, presentations.

After a careful investigation of a number of architects, a building committee will make greater progress if it will select directly on the basis of experience and general equipment. If the architect selected proves to be lacking in some respect, the board should tell him so that he will remedy the difficulty, even though it means hiring some expert to give the desired type of experience. Successful architects are primarily executives and the practice of architecture involves the careful cooperation of all the elements of building construction which come from a background of business training and, of course, artistic taste.



New building of the Lock Haven Hospital, Lock Haven, Pa., designed by Stearns and Woodnut, Philadelphia, Pa.

Dr. Samuel Langer, superintendent of the Pacific Hebrew Orphan Asylum of San Francisco, in his report on the "Organization and Construction of Child-Caring Institutions," says of the architect: "It is entirely feasible to select outright an architect whose professional qualifications, esthetic taste, business ability and personal qualifications, such as integrity, reliability and openmindedness are known to be equal to the task before us. To set such a one at work studying

the educational, social and administrative ideals on which our institution is to be conducted, putting at his service the knowledge we have gathered from our own experience and the history of other institutions, will go far to assure us of a set of plans based on our practical requirements and approved by every professional sanction."

Hospital boards should thus engage an architect who is known to be equal to the task. With this in mind, the process of selecting the architect calls for an analysis of the organization, personnel and executed commissions of the architectural offices considered worthy of designing the building in question.

### HOSPITAL AND HEALTH REVIEW CEASES PUBLICATION

The *Hospital and Health Review*, the only magazine of hospital and public health interest published in Great Britain, ceased publication with the December 1924 issue. The magazine was founded by Sir Henry Burdett in 1886 who edited it until his death in 1920. It was then known as *The Hospital*, and was published weekly. Since then it has been issued monthly.

The editor, Mr. J. P. Broadhurst, makes this comment in the last issue of the magazine: "It may be that the attempt we have made to combine, in one paper, these two divergent aspects of public medicine (hospital and health) was too ambitious for the times. If that is so, we do not regret our endeavor, and are satisfied to hope that time may remove the impediment to this 'marriage of true minds.'"

The U. S. Department of Commerce announces that the mortality rate in 1923 for the registration area was 12.3 per 1,000 population against 11.8 in 1922. Several states, Colorado, Idaho, Montana, Oregon, South Carolina, Utah and Washington, show lower mortality rates for 1923 than for 1922.

Digestion begins in the mouth.  
Billiousness is often mistaken for piety.



## SOME SUGGESTIONS ON THE PLANNING OF SMALL HOSPITALS

BY CHARLES BUTLER, BUTLER AND RODMAN, ARCHITECTS, NEW YORK, N. Y.

THE planning of the small hospital is even more complicated than that of the larger institution, for after all it comprises the same elements, but they must, perforce, be cut down to their simplest expression. There is always the struggle between what we want and what we can have with the money available, and usually we end by trying to see what we can "get on with!"

Nevertheless, there are certain elements which must not be omitted. One of the first is storage space. Very often it is suggested on the ground of economy that the entire cellar need not be excavated, but that under a portion of the building only height enough should be left to allow access to heating and plumbing pipes. In the case of a

walls is expensive, the cost is nothing compared to the cost of underpinning and carrying down the walls of an existing building.

Storage space on upper floors is also a necessity often overlooked. The surgical unit requires space in which to store fracture apparatus, Carrel-Dakin irrigation outfits and other apparatus, any ward needs, and space for wheel chairs and stretchers.

### Separate Housemaids' Closets

Housemaids' closets are often forgotten, or combined with utility rooms. They should be entirely separate and with room for pails, mops, floor polishers. If possible, this closet should have



The new addition of the Highland Park Hospital, Highland Park, Ill., which was formally dedicated in June, 1924, gives this hospital a capacity of fifty-five beds; the addition appears at the left. It was designed by Charles S. Frost, Chicago.

hospital consisting of a number of low buildings the aggregate cellar space might well be excessive, but in the more compact type of building three or four stories in height, so often designed for the small hospital of today, it is almost a certainty that the entire cellar space will be required, if not at once, at least in the course of a very few years. It should be borne in mind that while excavation and the carrying down of foundation

a window, but the architect is fortunate indeed who is allowed space enough to put a housemaids' closet on the outside wall. Failing that, a rather good arrangement consists in planning the closet in such a manner that, although it has its own door opening into the hall, it is only separated from the utility room by a marble or slate partition seven feet high. Such an arrangement provides air and a certain modicum of light in the

housemaids' closet, which is nevertheless completely cut off for all practical purposes.

In a small hospital there will rarely be more than one elevator which must be used for all purposes. The size of the cab should be ample to allow the entrance of a stretcher and attendants, about five feet in width and seven feet six inches in depth, and it should be of the simplest design. Most elevator manufacturers have established type designs for elevator cabs for hospitals, in which all ornament has been eliminated. What is known as a two-speed door, divided into three panels, two of which slide into the space back of the third panel, gives a large opening and is satisfactory for hospital service. Gray or buff enamel paint is an excellent finish for walls, while the floor of the cab should be covered with cork tiling, linotile or linoleum.

In a low building, in a town where there is a good supply of water and the water rates are not high, it may prove economical to use a hydraulic elevator, the original cost of which is lower than that of an electric.

### Two Exits from Each Floor

In any hospital there should be two means of exit from every floor, well separated from each other. This requirement may easily be met in the case of a large hospital, but in a small building it is far more onerous. With the requirement of modern practice that the wards be broken up into small units it is probable that the major axis of the building will run north and south with small wards and private rooms on either side of a central corridor and porches at the south end. From this it will naturally follow that the main stairs will be placed near the north end and a secondary stair may connect the airing balconies or sun rooms at the south end.

### Rooms Which Can be Reduced in Size

In view of the possibility of a break-down of the one elevator, the main stairs should be at least three feet six inches wide and should have level landings across each end of the runs and these landings should be deep enough to allow of turning a stretcher with ease. It is also well to have a continuous ramped hand rail on the well side, in place of the usual arrangement with a newel at each landing, so that a stretcher bearer may slide his hand along the rail and not be forced to relinquish his hold on the turns. It hardly seems necessary to add that the stairs should be in a separate enclosure from the elevator, well provided with natural light and cut off, at least on the upper floors, from the hallways by kalamein doors glazed with wire glass.

In planning the diet kitchens of a small hospital, it is well to remember that each unit usually serves a smaller number of patients than in a large hospital. While the fixed equipment, such as steam table, refrigerator, sink, is the same, the working space required may be somewhat reduced. Thus, in a small maternity service, recently planned by the writer, where economy was essential, the diet kitchens, which served respectively eight and ten beds, were reduced to an area of about one hundred square feet. This may be considered an absolute minimum. The same reasoning may be applied to utility rooms which may be reduced to a minimum width of six feet six inches, if the plumbing fixtures are placed in line along one wall.

On the other hand, corridors cannot be correspondingly reduced in width, for though the passing to and fro is much less than in a large hospital, the length of stretchers which must be wheeled out of rooms and turned remains the same. It is sometimes possible, by providing recesses at certain points for turning stretchers, to reduce the general width of the corridors as low as six feet six inches, but this arrangement will require very careful study and skillful planning.

The problem of location of kitchen and laundry is one of the most difficult. If it is possible, they should be in a wing by themselves and with no patients' rooms over them. If grades permit, a good solution lies in planning a two-story wing with the laundry in a basement well out of the ground, the floor not more than three feet below grade at the worst, and the kitchen over the laundry at the main hospital floor level.

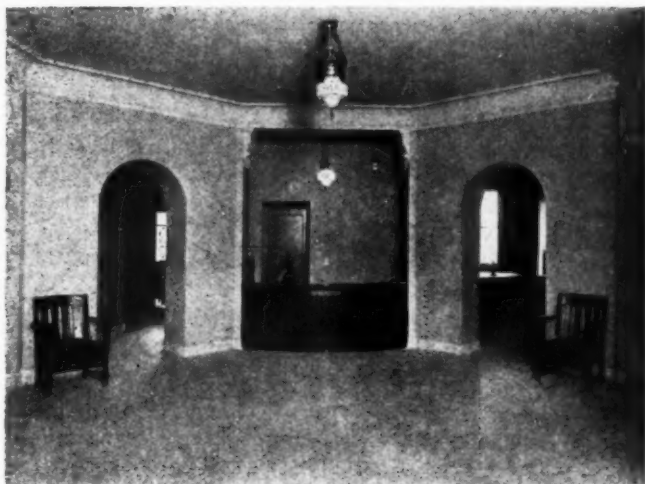
If, on the other hand, it is absolutely essential that these units be placed under the hospital proper every effort should be made to place them beneath offices or service rooms, and if they must be directly under patients, it is well to remember that children are less bothered by noise than adults, and probably male patients less than women.

### Ample Storage Space Essential

Although the kitchen of a small hospital need not be large, it is necessary to allow sufficient storage space, easily accessible, to permit of purchasing supplies in quantity, and the refrigerator composed of three separate units must also be ample. The meat section should be of the walk-in type at least five by seven feet with smaller units for milk and vegetables and, if possible, a vestibule so that meat may be cut up, outside of the kitchen proper.

If ice must be used, the icing door should be reached from outside and not through the kitchen.

VIEWS OF THE NEW MISSOURI METHODIST HOSPITAL, ST. JOSEPH, MO.



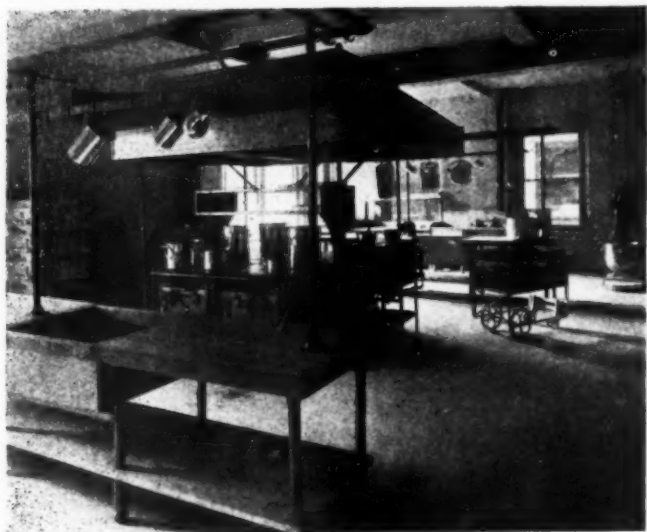
Entrance hall and information desk.



The nurses' dining room.



The new home of the Missouri Methodist Hospital, St. Joseph, Mo., a building containing 180 beds, erected last year under the architectural supervision of Walter Boschen, St. Joseph, Mo.



A view of the main kitchen.



A corner of the physiotherapy department.





The new Ottawa Civic Hospital, Ottawa, Ont., which was recently opened. It was designed by Stevens and Lee, Toronto, and Mr. J. A. Edwart, associate architect. It will accommodate 600 patients and is the largest hospital in the Canadian provinces.

If it is possible, the kitchen and laundry should have cross ventilation, and hoods with ventilating ducts and fan should be provided to carry off vapor from the laundry equipment, while the kitchen may depend on natural ventilation from the hood over the range and cookers, the range flue being carried up in the vent shaft.

In the matter of entrances, it is desirable to so plan the hospital that the out-patient department will have an entrance independent of the general entrance for visitors and in-patients, that the ambulance entrance will be out of sight of the patients and that the service entrance will be remote from the other approaches. All the above is easy to recommend but difficult of realization in the case of the small hospital, but at least it is worth striving to attain.

#### Importance of Fireproof Construction

A final word as to construction may not be amiss. In New York state no patient may be cared for at state expense in a non-fireproof hospital over twenty feet in height. This means that any hospital over two stories in height which expects to receive state aid must be fireproof. As a matter of fact, no one should be willing to risk the lives of patients in a non-fireproof building over two stories high, and with the great increase in the cost of lumber as compared to steel, the requirement is not unduly severe. The difference in cost between fireproof and non-fireproof construction is much less than before the war and the lesser cost of upkeep in the fireproof structure is of continuing benefit to the institution.

The increasing use of linoleum placed directly on the cement finish of floors in place of wood fin-

ish flooring laid on rough under floors which are nailed to sleepers bedded in the concrete fill is a simplification of modern practice.

Pressed steel combined door "bucks" or frames and trim, replacing the older wood bucks and wood trim are now being produced at a cost which compares favorably with the cost of wood. All mouldings are thus eliminated, the steel trim finishes flush with the plaster, and the continual damage to wooden door frames, so noticeable in most hospitals, is avoided.

The manufacturers of metal window frames and sash are making rapid progress in this field and are already beginning to compete with the wooden sash manufacturers.

In the matter of stair construction, pressed steel has taken the place of the expensive cast iron of a few years ago, so that item, also of fireproof construction, has become less costly. In a word, standardization of building materials and construction methods is tending to bring down the cost of the best type of building and to make it possible to secure for the small hospital the sanitary efficiency and safety in construction which were in the past reserved for the more important institution.

#### THE PHYSICIAN'S WORKSHOP

The hospital is the physician's workshop. That is all it is. It is merely a place where he can work to best advantage, as a mechanic can work better in his shop with all his tools about him, and a cook can produce better meals in her kitchen than over a camp fire. . . . And an intelligent and sane community wants a hospital because it wants those who are set apart to care for its health, to do good work, the best possible work, under the best possible conditions.

# HOSPITAL PLANNING PROCEDURES

By EDWARD B. HUSSEY, JR., BERKELEY, CALIF.

**I**N PLANNING any building, and especially a hospital, where it is extremely important to reduce lost effort to a minimum, the various parts, rooms, and departments should be systematically arranged and related to each other in a way requiring the least amount of travel and cross circulation. Bearing in mind various hospital procedures, the hypothetical illustrations in the accompanying diagrams will assist in the more efficient planning of the hospital.

## Provision for Various Departments

In the public institution it is especially necessary to have complete admitting and out-patient service. In this case, a full examination and diagnosis is generally needed upon arrival at the hospital, and there is often provision for a regular admitting procedure, including bath, examination, and change to hospital clothes, the patients' clothes being sterilized and stored away in locker rooms. There must be sufficient provision for the making and keeping of records and for the social worker to investigate all aspects of the case other than medical. The ambulance entrance leads directly to the admitting department, and there

travels very quickly, and pass directly to the waiting room close to the department where they are to be cared for.

The new patients must have a waiting room directly at the entrance where they await preliminary investigation of their cases, both socially and medically, and are assigned to the proper group for treatment. They then go to their respective clinical waiting rooms.

## Special History Rooms

In conjunction with the examination and treatment rooms, it is necessary to provide for the history work. In some cases special rooms are devoted to this purpose, but a very good system, which is often employed in large hospitals, is to have a history corridor connecting the waiting room with all the rooms of a certain clinical group. After treatment or examination, the patient leaves directly, or goes to the pharmacy to have his prescription filled.

The surgical department may be entirely empty at certain times, but at other times it is running to its full capacity, with a large corps of workers. Proper planning may eliminate much un-

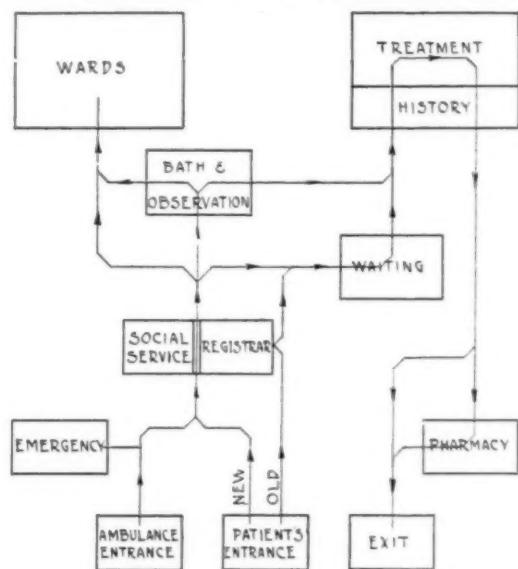


FIG. 1-ADMITTING & OUT PATIENT PROCEDURE

should be an accident or emergency room adjoining.

Figure 1 represents the out-patient and admitting departments, treated as one. All patients enter one door, and then divide into two groups. The old patients who have been classified and are already assigned to their respective clinical groups transact their business with the regis-

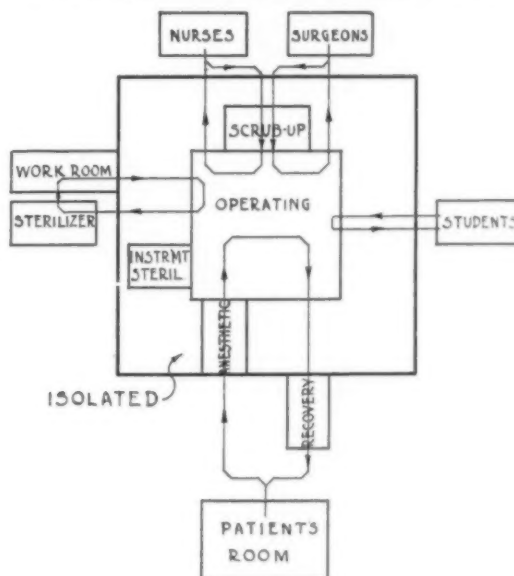


FIG. 2- SURGICAL PROCEDURE

necessary travel and confusion, which is a vitally important thing to do.

## Lines of Travel During Operation

Figure 2 shows the lines of travel of the different persons involved during the course of an operation. The patient is taken from his bed to the anesthetic room, where he is prepared for the

operation. It is best to have the entrance to this room from the regular corridor of the hospital, then, while under the anesthetic, he is taken from this room to the operating room. After the opera-

often provided for in connection with the regular operation suite. In the larger hospitals, the maternity department is entirely separate, with labor and delivery rooms in direct connection. The line

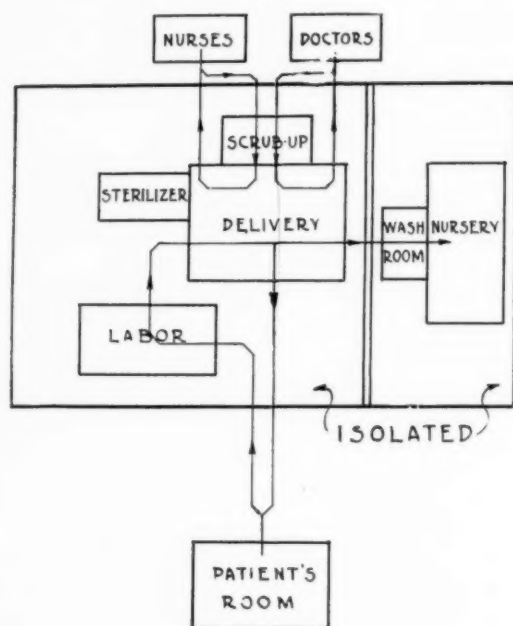


Fig. 3. Obstetrical procedure.

tion, the patient is taken to the recovery room, if one is provided, and thence to his own bed.

The doctor should be supplied with a dressing room containing lockers, toilet, and shower. After donning operating room apparel, the surgeon goes through the scrub-up process, and then to the operating room. When his work is completed, he returns to the dressing room. The "clean" nurses go through a similar procedure. If connected with a medical school, it is well to have a students' entrance directly to the viewing stand.

The instrument sterilizing room should be near, or next to, the operating room. There should be an ample workroom for the arranging and storage of dressings and operating materials, both sterilized and unsterilized. There should be a sterilizing room, with autoclave near, or next to, this room. In some hospitals, the operating room bundles are made up, and sterilized in the basement, or some other place away from the operating room.

### Two Divisions to Operating Suite

There may be two divisions to the operating suite, the particularly clean division, which may be locked up separately, containing the operating room proper, the scrub-up, and the sterilizing rooms, as indicated in the diagrams. The other rooms may be on a separate corridor.

In the small hospital, the obstetrical work is

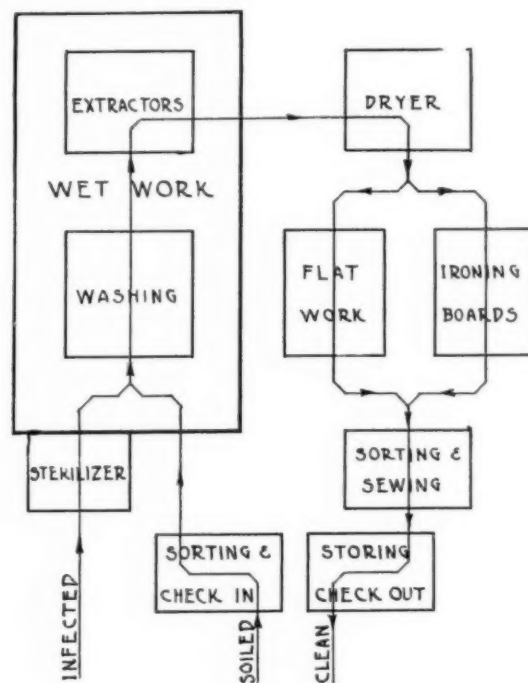


Fig. 4. Laundry procedure.

of procedure is indicated in figure 3. The general requirements for the delivery room are similar to those for the operating room. Special attention must be given to the isolation and sound-proofing of the labor, delivery, and nursery rooms.

An immense amount of material passes daily through the hospital laundry. A well-arranged plan adds greatly to the capacity of the plant, and assures better treatment of the goods. The line of travel and process of the laundry is indicated in figure 4. Special care must be taken with the infected laundry to see that it first goes through a sterilizer, and then passes on with the rest of the laundry.

It will be noted that the part of the laundry where the wet work is done is in a separate room. The sorting, sewing, and distribution of the material is important, and adequate space should be given for this work to be carried on, and supervised.

Diagrams, similar to the above, may be made to show the interrelation of departments, the lines of travel of food, power, and other supplies. The diagrams may also be enlarged to give greater detail as to placing of beds, desks, apparatus and plumbing.

There is one supreme genealogical test. It is the answer of the human spirit to the call of a great purpose.—*Selected.*



## HOSPITAL PLANNING IN RELATION TO EFFICIENCY IN PROFESSIONAL SERVICE

BY R. G. BRODRICK, DIRECTOR OF HOSPITALS, ALAMEDA COUNTY HOSPITAL, SAN LEANDRO, CALIF.

EVERY patient, whether pay or free, has the fundamental right to expect good care while in a hospital.

Efficient professional service requires a competent medical staff and a sufficient number of well-trained graduate and pupil nurses.

An interesting study in hospital nursing service was made about four years ago in Mount Sinai Hospital, New York, N. Y., at the request of the New York Academy of Medicine, to secure definite information as to the amount of time required for suitable and adequate nursing care of the average hospital patient.

The time consumed in the performance of each nursing procedure was estimated from the moment the nurse began until she was at liberty to leave the patient. It was found that an average of four hours and forty-nine minutes were devoted to each patient during twenty-four hours. This did not include time spent in general nursing duties on the wards, such as care of equipment and supplies, making rounds with visiting chiefs, and house staff, looking after visitors, and answering telephone calls.

Using the figures obtained as a basis for estimating nursing needs, we are forced to conclude that a hospital ward of thirty beds requires fifteen nurses for twenty-four hours of service, which would furnish a

standard of nursing service no higher than is demanded provided both patient and nurse are to be fairly treated. With the proportion reduced to one nurse for every three, four or five patients,

as is common, we must realize that the sick in general wards do not receive the amount of nursing care to which they are entitled.

As the problem of providing adequate care is chiefly a financial one which is extremely costly, anything that reduces distance through proper planning of the hospital ward, thereby eliminating waste of energy, becomes a vital factor in raising the standard of nursing service. Faulty hospital planning has placed patients' beds over one hundred feet distant from a water closet or clinic slop sink.

Experiments made by Dr. Gilman Thompson in several hospitals reveal that the average nurse, during eight hours of ward duty, walks over five miles. Dr. Thompson further determined that when a patient required a bedpan, the nurse moved a screen weighing ninety pounds and often carried the bedpan over 400 feet.

The ideally planned ward unit is one that best serves the patient with the least amount of lost energy on the part of the attendant. To accomplish this the important requisite is the central location of service rooms. These are not con-



The new Samuel Gustine Thompson Annex of the Jefferson Hospital, Philadelphia, Pa., designed by John T. Windrim.

veniently placed in the majority of hospitals, as they are usually located at one end of the ward.

### Standards for Locating Service Rooms

On account of extreme variation in hospital problems it is impossible to adopt a standard plan for a ward unit. Local conditions will determine its size and shape. However, standards can be established for proper location of service rooms, which, together with corridor and lavatories, comprise about 25 per cent of the entire floor area of the ward.

When the site and requirements permit, the H-shaped hospital building, or the T-shaped ward unit, lends itself most ideally to the proper placement of the service rooms in regard to private rooms or wards for patients.

The details of the service rooms which perform such an important function in the hospital of today must be thoroughly worked out. Only in this way can the maximum efficiency of the hospital personnel be developed at a later date. Rooms should be planned about equipment which, in turn, must be arranged in proper circulation and answer the requirements of the service to be performed.

The length of this paper permits only of the description of the principal service rooms.

The nurses' station is best placed in the center of the ward unit at the intersection of the entrance and ward corridors, so that supervision of entrance and exit of patients and visitors is readily exercised. The nurses' station is usually lacking in outside light, proper ventilation, and necessary equipment. It should have adequate desk space with racks for patients' charts, nurses' call annunciator, medicine cabinet with hot plate, red bull's eye which lights when poison cabinet is opened, and radiator of sufficient capacity to keep nurses warm on cold nights.

Here, also, should be located electric clock, signal or paging system for the staff, fire hose and extinguisher, mail chute, electric panel board and emergency gas fixture.

The telephone should be placed in a sound-proof booth, mechanically vented and near two small closets for stores, one for the day supervisor and the other for the night supervisor, who

are thereby able to keep costly supplies under control, but available for immediate use. The night supervisor's closet must be kept well stocked for all emergencies.

Conveniently located should be the nurses' lavatory, consisting of toilet with washbasin and mirror, also vented wardrobe for wraps. Every ward floor should have a rest room for special duty nurses with individual lockers large enough for suit-case, and lavatory adjoining. Such rest rooms should be equipped with duplicate nurses' call annunciator.

The serving pantry, elevator, apparatus room, as well as janitor's closet, should extend along the entrance corridor so that, although convenient to the ward, the noises incident to the operation of these utilities can be kept away from patients.

A common fault is to plan the serving pantry or ward kitchen, by far the most used of the ward utilities, entirely too small. At least two hundred square feet, or about fourteen by fourteen feet, are required to provide sufficient



The new Salvation Army Woman's Home and Hospital, Chicago, Ill., designed by Richard E. Schmidt, Garden and Martin, Chicago.

work room and space for proper arrangement of adequate equipment, so that hot palatable food may be quickly and quietly served to patients. It should be centrally and conveniently located so that trays may be served with the least possible labor and delay. The ideal location is outside the ward-unit but not too far from the nurses' station. Odors of cooking, as well as unavoidable noises, incident to handling of dishes, will thus be kept out of the ward corridor and away from the sick.

Trays from the main kitchen, and special diets or nourishments are readily transported to the ward serving pantry by means of electrically operated dumb-waiters.

### Location of Utility Room

The utility, or sink room, on account of its frequent use by nurses attending bed patients must be within close proximity to private rooms. No other service room should be interposed between the nurses' station and rooms occupied by critically ill patients.

Thoughtful consideration must be given to arranging this important service. Much of the arduous duty of the nurse is performed in this room.

Therefore, every effort should be made to conserve her energy and lessen her steps by proper circulation and adequate equipment. It must be large enough, well lighted by outside window, and provided with mechanical exhaust ventilation so that no odors pass from it to the corridors or rooms of patients. The partitions, and, if necessary, the ceiling, should be sound-deadened.

Besides the utensil rack for bedpans and urinals, clinic slop sink, utensil sterilizer and pack sink, there should be provided a nurses' work table, well located and of adequate size. This is extensively used by the nurse for preparing enemas, irrigations, compresses, and douches. Above are shelves for supplies, while below is one for basins, pitchers, and irrigators.

A ventilated cabinet is provided for keeping specimens of urine and feces, and a small refrigerator should be fitted with drawer for cracked ice.

The bedpan sterilizer, complicated in design, and frequently out of order, should be preserved for isolation wards handling acute communicable diseases where it becomes necessary to disinfect excreta from patients affected with intestinal borne diseases, such as typhoid fever, and amebic dysentery, thereby preventing infection from be-

ing transmitted through the medium of sewage.

A heated closet is desirable for drying wet linen before it is dropped through soiled clothes chute.

A small sink room, with outside ventilation and porch, is needed for care of patients' flowers, which requires much of the nurses' time. This work can be more properly cared for by an intelligent ward maid.

### The Patients' Room or Ward

In a ward for the acutely ill about one-half of the patients are in a serious condition, some dying, while the remainder are convalescing. The nurses' steps can be confined to the smallest possible radius by segregating the seriously ill in separate rooms at one end of the ward corridor close to the nurses' station. The remaining portion of the ward-unit is set aside for convalescing patients.

The treatment room and, in a public hospital, the dining room used by convalescents, are conveniently placed while at the extreme end of the building beyond the ward the solarium, or day room, permits those frequenting it to enjoy sunshine, open air and one another's company, removed from the depressing influence created by the sick or dying.



The new Hospital for Joint Diseases, New York, N. Y., designed by Buchman & Kahn, architects, and Mr. Oliver H. Bartine, consultant. It contains 275 beds and is the only hospital of its kind in the country.



Every patient's room, including the ward, should have a toilet adjoining, so equipped with swinging gooseneck, or syphon-jet, that bedpans can be conveniently emptied and cleaned by the attending nurse. Running water should be in every patient's room, the wash basin being fitted with a high curved combination spout, so that water at proper temperature may be readily obtained, or removed in pitcher or basin when necessary.

In pay rooms a metal medicine closet for patient's toilet articles is placed above the wash-basin.

### Fewer Bathtubs Installed

As a larger number of toilets are being generally installed, the tendency in modern hospitals is to reduce the number of baths. In a private hospital a few rooms with private bath may be installed for patients who are financially able to pay for this additional privacy. The bathtub should be approachable on three sides so that the nurse can, if necessary, assist the patient. A nurses' call signal conveniently placed is an aid to good service.

The patients' room in the private hospital has almost reached its maximum development. What a change has occurred during the last decade in the appearance of these rooms, which now with colored sanitary wall covering and picture mould, with steel furniture, painted in harmonious tones and with well-chosen draperies have become really attractive.

### Proper Location of Bed

It is impossible for the nurse properly to attend the patient when the bed is placed against the wall. It should be at least eighteen inches distant, so that the nurse can reach both sides of the bed, and is most conveniently placed for both patient and nurse when the head of the bed is against a partition wall, and when the window sill is placed low enough for the patient in bed to look out.

There is a marked tendency to bring a number of outlets near the patient's bed, such as reading lamp, nurses' call system, telephone and, more recently, connections for radio. An outlet should be properly located in every room for plugging in a special night light fixture, of low wattage, and so constructed as to cast the light upon the floor.

We should avoid placing doors in line with windows, or opposite other doors, so as to avoid draughts.

The hardware of the patient's door should be carefully selected, so as to eliminate unnecessary noise that seriously interferes with the comfort

and well-being of the patient. All patients' doors should be provided with door closers fitted with locking arms that will hold the door open when required.

The door butt should be of the ball bearing, self-lubricating type so as to eliminate the squeaks commonly heard.

When a door closer is installed, the latch that produces the familiar click which frequently annoys and awakens the patient can be eliminated; likewise, the unsightly door muzzle consisting of a towel stretched from knob to knob to retard the latch.

A useful feature to facilitate nursing service is the built-in and vented metal cabinet now used in new hospitals. The upper section accommodates a pitcher, basin, enema-can, and other equipment used in treatment, the middle section contains a small ice-box while the lower section is fitted with bedpan, urinal and emesis basin.

### PROGRAM COMPLETED FOR AMERICAN CONFERENCE ON HOSPITAL SERVICE

The revised program for the annual meeting of the American Conference on Hospital Service which is to be held Thursday morning, March 12, in the gold room of the Congress Hotel, Chicago, Ill., as a part of the annual A. M. A. Congress on Medical Education, Medical Licensure, Public Health and Hospitals, is as follows:

- (1) Annual report of the Hospital Library and Service Bureau, by Miss Donelda R. Hamlin, director of the bureau.
- (2) "The Extension of Hospital Privileges to all Practitioners of Medicine, by Dr. S. S. Goldwater, president of the conference.
- (3) "Hospital Facilities and the Medical Profession in the United States" (statistical summary) by Mr. Homer F. Sanger, Council on Medical Education and Hospitals, American Medical Association, Chicago, Ill.
- (4) "Educational Opportunities of the Open Hospital," by Dr. M. T. MacEachern, associate director, American Hospital Association, hospital activities.
- (5) "Educational Opportunities of the Closed Hospital," by Dr. A. C. Bachmeyer, president-elect, American Hospital Association, Cincinnati, Ohio.

Simplified Practice Recommendation No. 5 of the Bureau of Standards, covering hotel chinaware, was issued during January, and copies may be obtained from the superintendent of documents.

These standard sizes have been adopted in accordance with the unanimous action on May 28, 1923, of the joint conference of representatives of manufacturers, distributors, and users of hotel chinaware, which was held under the direction of the Simplified Practice Division.

Sixty-four sizes are included, and it is recommended that the recognized items be made in three weights only, as covered by the trade names "Rolled Edge," "Medium Weight," and "Light Weight," respectively.

An Indian author has said: "You can convince the wise; you can convince, with more difficulty, the ignorant; the half educated, never."—Faguet.

## MODERNIZING THE OLD HOSPITAL

BY EDWARD F. STEVENS, F.A.I.A. OF STEVENS & LEE, ARCHITECTS, BOSTON, MASS., AND TORONTO, ONT.

WHILE the great development in hospital building has been since the beginning of this century, there were many institutions throughout the land that were functioning as hospitals previous to that time, which are now being modernized. Many of those institutions have been enlarged from time to time without a thorough consideration of future needs. Thus, the great problem which confronts the hospital architect is how he can make the old building, which generally must be retained for economical or sentimental reasons, function adequately for the modern methods of the sick.

Many old buildings yield to modernizing and come into the final group and serve with little alterations, while with others it seems well nigh impossible to bring any degree of harmony into the group and still use the old buildings to advantage. In such cases the only sane procedure is either to raze the objectionable buildings or seek a new site, plan a new institution, and build to a general plan of development.

But what we are to discuss here is a few examples where it has been possible to develop institutions in a logical way by adding new units and modernizing the old.

In many of the smaller cities and large towns the hospital center has been started by a gift by some philanthropic citizen of his palatial residence as a hospital. Much good work has been done and is being done in these old residences and

all honor to these public spirited citizens who have started these splendid enterprises. The time, however, soon comes when the residence no longer functions because of overcrowded conditions, or the fire menace in these non-fireproof buildings, and the architect is brought in to enlarge and modernize the residence.

Often the hospital committee may be persuaded to use the residence as a nurses' home and have a new hospital designed, while in other cases the building is modernized by new additions.

Some of the first difficulties in making such a building into a hospital are narrow doors through which no bed will pass, stairs so steep and winding that they make difficult the carrying of a patient from one story to another, high windows, small bathrooms, the find-

ing of proper locations for service rooms, proper lighting for operating room, etc., as well as the general unhygienic conditions of old finish and floors.

One example of this nature which developed rather well was described in the February, 1918 issue of *THE MODERN HOSPITAL*.<sup>\*</sup> This is the Choate Memorial Hospital at Woburn, Mass., and the illustration will show the two different developments made to bring this to a well functioning hospital of thirty-three beds with laboratory and x-ray facilities, as well as teaching facilities

<sup>\*</sup>The Transformation of a Dwelling House into a Hospital: *THE MODERN HOSPITAL*, Vol. X, No. 2.



Figure 1. The Choate homestead at Woburn, Mass., as it originally stood.

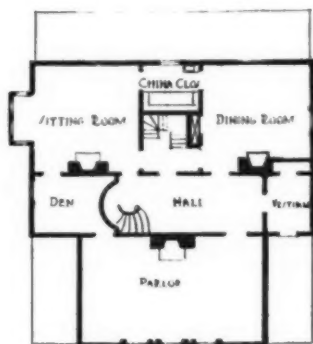


Fig. 2.

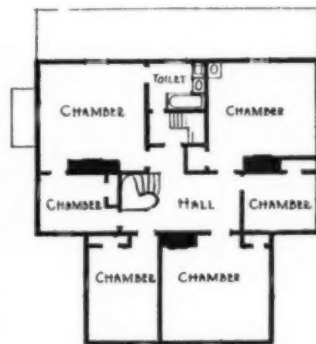


Fig. 3.



Fig. 4.



Fig. 5.

Figure 2. First floor of the Choate homestead before modification. Figure 3. Second floor. Figure 4. First floor after first remodeling. The parlor and sitting room have been transformed into wards; the den has been made into an office, and the circular stairway has been removed. Figure 5. Second story after first remodeling. One large bedroom has been transformed into an operating room and another into a diet kitchen. The others have become wards and superintendent's room respectively.

for the training school for nurses.

In the first development it will be seen how, with very modest changes, a fairly workable hospital was evolved. The exterior of the Choate Hospital (figure 1) was of the type one often encounters, especially in New England, built in the sixties, with great double parlors, heavy cornices and finish, stately dining room and serving pantry, and basement kitchen. All of these features lend themselves to "hospital treatment," as will be seen by comparing the plans of the original house (figures 2 and 3) with those of the replanned hospital (figures 4 and 5). The funds available for alterations were small so that changes were necessarily restricted.

The grand parlor made an excellent five-bed ward without change, while the sitting room

served as a children's ward, and the little den as the hospital office. The circular stairs which had to be torn down were replaced by more commodious stairs, up which the stretcher could be carried. The dining room was cut into a corridor, a serving kitchen and a linen closet. The garden porch served as an airing balcony.

On the second story a good operating room and accessories were made from one of the large chambers, while another served as a second-story serving room. The balcony was extended to this story. The changes in the basement were small. The kitchen needed no change and the old laundry served nicely for a nurses' dining room. In the attic, the servants' rooms were used for nurses' quarters.

Thus the Charles Choate Memorial Hospital started out as a complete fourteen-bed institution.

After eight years of successful management,

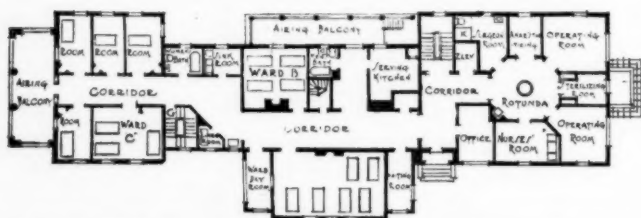


Figure 7. First floor of the Choate Hospital. The operating room and other rooms in the surgical suite center about a rotunda, in the center of which is a surgeons' scrub-up fountain.

friends of the hospital, who appreciated the splendid work being accomplished with the simple equipment, came to the rescue with bequests and generous donations, so that in 1916 the much needed expansion was authorized.

The greatest needs were, first, better operating facilities; second, more private rooms; and third, a maternity department worthy of the name.

But few changes were necessary in the original building, as will be noted on the plans (figures 5, 7, 8). The kitchen was enlarged; the old nurses' dining room was made into cold storage

and a serving room for the new dining room; the stairs were removed and the serving kitchens enlarged; the old operating suite was turned into a maternity delivery room and bathroom, and one of the private rooms

was remodeled for use as a crèche.

The new portions were planned to meet the deficiency of the old building and the growing needs of the community. A new main entrance and office were created and a new operating department provided.

The ambulance entrance is below the surgical department and adjoins the laboratory, the x-ray, and the autopsy rooms. A small isolating suite, with special plumbing, is provided, as well as drug, storage and record rooms.

In the basement of the medical wing are located the nurses' dining room, the lecture and ladies' aid rooms. An automatic electric elevator connects all stories. The first story of the medical and the second story of both the surgical and medical wings are planned for private patients, mostly in single rooms. At the south end of the building airing balconies are provided.

Sink rooms, toilets, baths, and linen rooms are

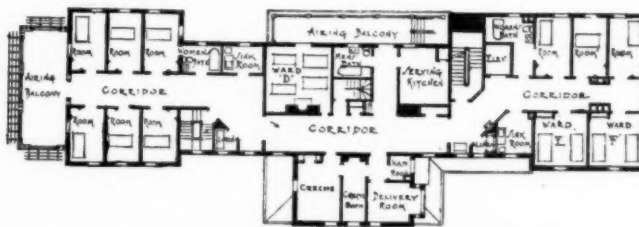


Figure 8. Second floor of the Choate Hospital. The former operating room (in the center) has been connected into a delivery room.



arranged for the efficient carrying out of modern hospital service.

For the mechanical plant, the old stable was utilized, affording plenty of room for the heating and laundry equipment.

With the older institutions, where the large open wards prevailed and the extremities of the buildings terminated with large wards, the problem of making additional capacity either in wards or rooms for patients and having the same properly connected with the main building often becomes difficult, for the width of the old wards would be too narrow to allow the building of a corridor through the center, and good practice would dictate that service should not pass through the open ward. Moreover, the structure of the foundation and supports in the basement may be such as to defeat the ideal plan.

Such a problem was given the writer in the Victoria General Hospital at Halifax, N. S.,

where the main building (figure 10) flanked by the wings and the wooden service buildings left only the front for a possibility of extension. This not being feasible, it was necessary to build a detached building to accommodate the private patients and the only possible internal approach was through the roof of the old ward building

building and across a bridge spanning forty feet or more to the new pavilion, making the food and supply service down instead of up, as in the general plan. Here we felt justified in recommending that the kitchen of the new service building should be on the level of the third story. This would have simplified the food service problem but the architect's advice was not followed and it is necessary to take the food to the top story of the old building and then down again. The pavilion, however, is functioning not only for private patients but for additional operating, maternity, x-ray and medical treat-

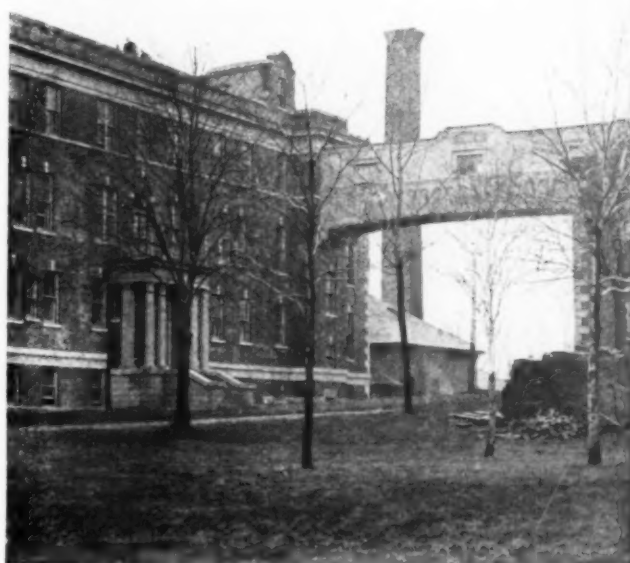


Figure 9. Exterior of private pavilion, Victoria General Hospital, showing bridge connection to roof of old ward building.

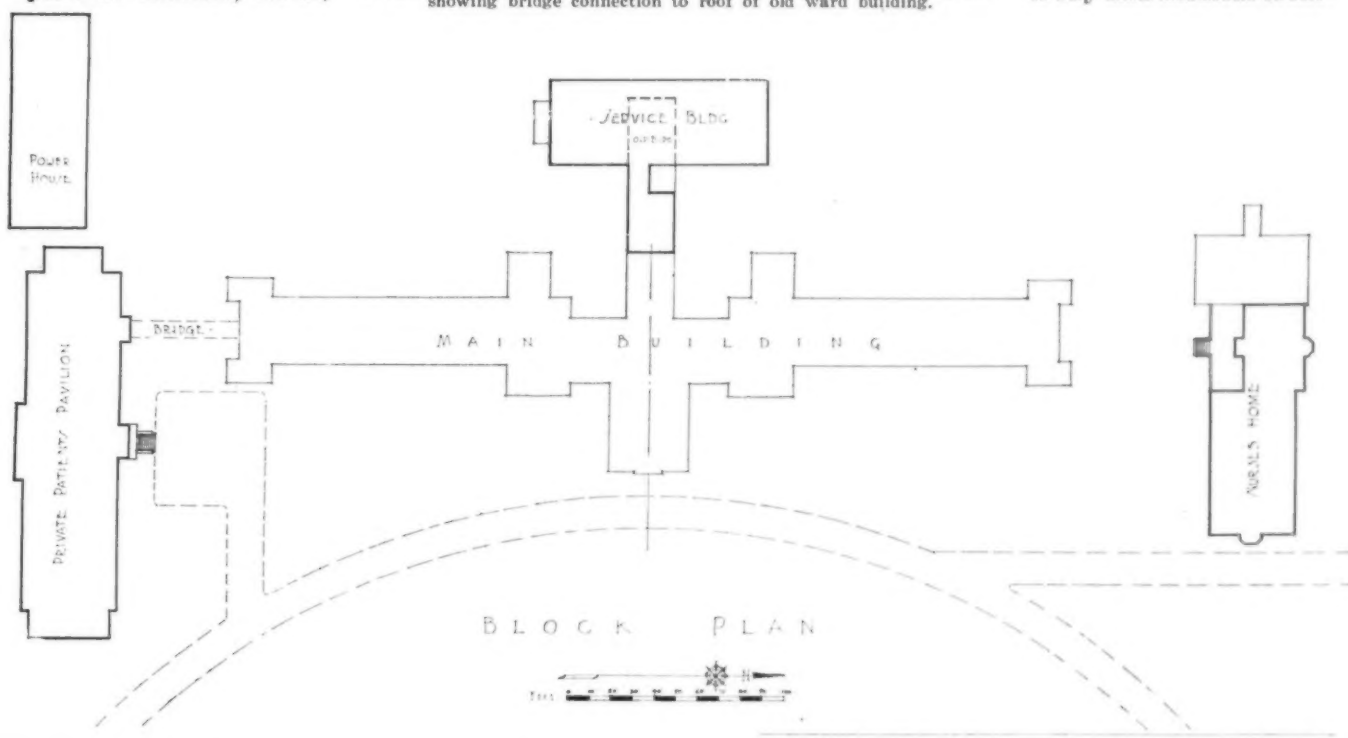


Figure 10. Victoria General Hospital, Halifax, N. S., showing original and extensions connected by bridge.

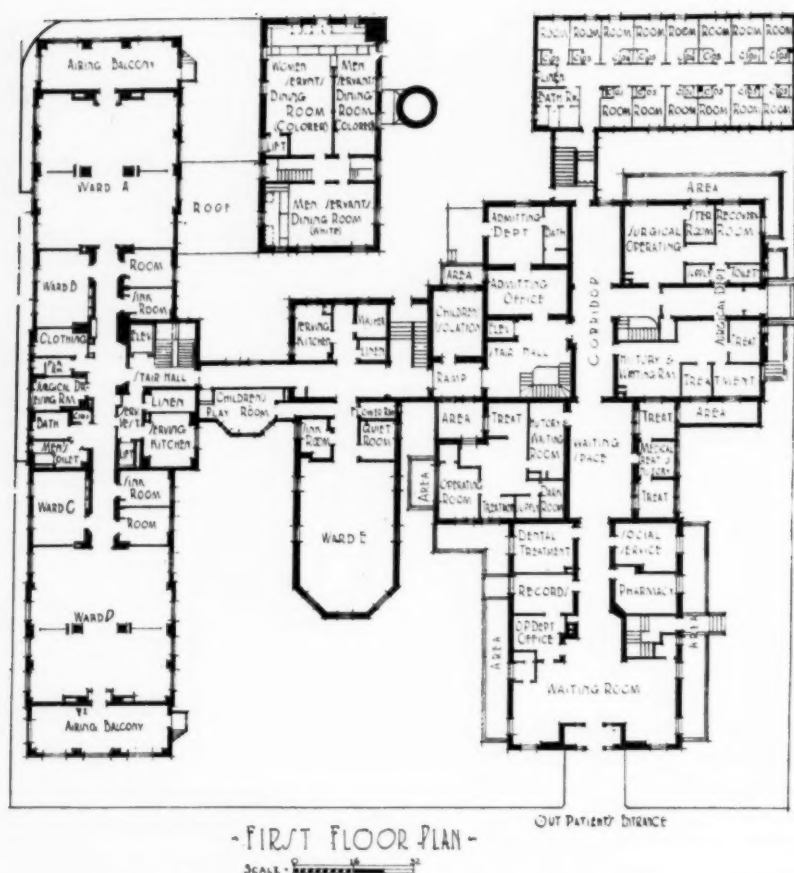


Figure 11. Harrisburg Hospital. Plan of first story, showing old and new portions.

ment for the hospital.

The functioning of the bridge as a means of approach is shown in figure 9.

### A Cottage Type Hospital Remodeled

Another example of a hospital built in the early part of the century, at a time when the prevailing style in hospitals was the "cottage," or one-story type, will show some of the difficulties of administration as the demand for more buildings increases. This is the St. Luke's Hospital at New Bedford, Mass.

The original buildings, A, B, C (figure 13) were complete and functioning for the number of patients needed at that time. They were but one story in height and constructed in such a way that another story was impossible and, as these first buildings were very near the street line, it gave only two directions in which to expand when additional accommodations were needed. Connecting corridors were resorted to, therefore, and a series of two- and three-story buildings have been built when demanded.

The operating building and the two ward buildings at the rear (D and E) were the first to be added.

The main corridor was extended and the maternity ward (F) was added in 1915. More

room for private patients was needed in 1923 and the three-story private building (G) on general plan was built, connected through a one-story corridor with the front main corridor and in the rear with an open corridor to the Hathaway (I) ward.

In 1924 when a children's building was demanded, the only available space was on the main front. This is now being built.

With this last development it is possible to couple up with the heating system through a tunnel, making possible an underground passage through the entire system.

In many ways a hospital of this pavilion type with numerous buildings works for a flexible institution, but with the great horizontal distances much time is wasted.

With this problem it can readily be seen that if the original planners could have foreseen the future needs and placed the administration building nearer the center, or designed and built buildings of two or three stories at the start, the future development would have been vastly easier

and the service greatly simplified.

### Vertical Expansion of an Old Building

A case of a hospital in a very congested city block with little or no room to expand except

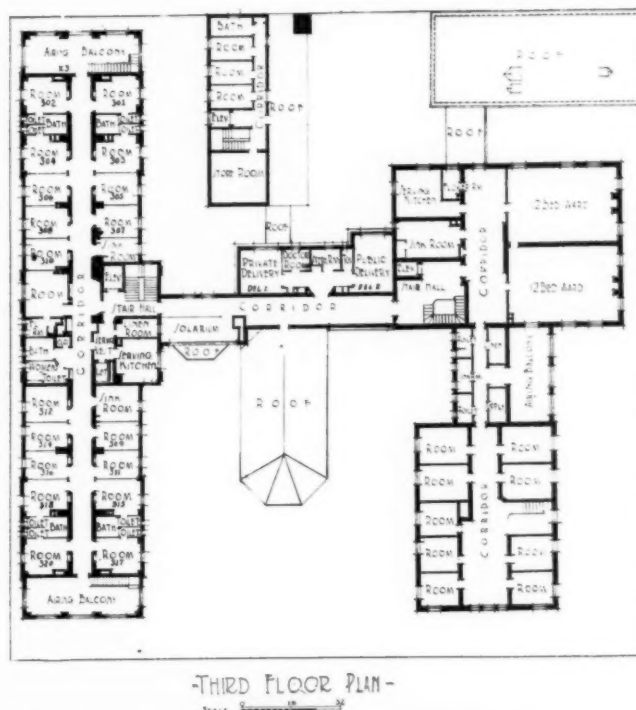


Figure 12. Harrisburg Hospital showing connection of maternity department with new building.

vertically, with the redeeming feature of a picturesque view on the Susquehanna River, was that of the Harrisburg Hospital, Harrisburg, Pa. According to tradition, the original brick building was used to care for the wounded from the battle of Gettysburg.

From time to time, many additions were made, each with its different level, necessitating ramp approaches to the different floors.

In 1922, there was a demand to double the capacity of the hospital. With the land available extremely limited, the only solution seemed to be to erect a high narrow building, towering above all the adjacent buildings, with suitable connections to the existing structures. This scheme was blocked at the start because of the failure to secure one small lot, so that the rear portion of the new building consists of nine available floors so designed as to be extended when the desired land becomes available at the death of the present occupant of the property.

When the patients are removed to the new buildings the first two stories of the hospital will be remodelled for a new and complete out-patient department.

In the new nine-story addition (plans of first and third stories, figures 11 and 12), not only wards and private rooms are provided but also a complete operating and maternity department. The exterior is shown in figure 14.

Coupled with this hospital development was the building of a nurses' home upon a very narrow street, and the plan of recessing the different sections, forming small court yards, as it were, secured the maximum amount of light and air. (See typical plan and photographs.)

We have mentioned a number of hospitals

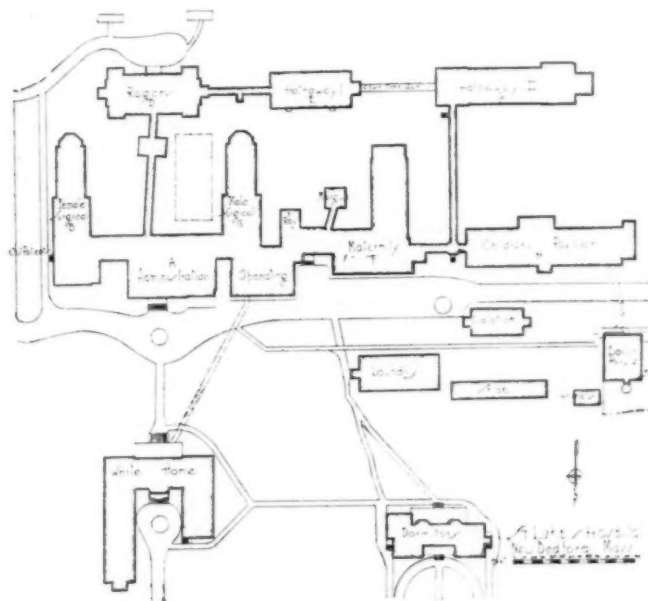


Figure 13. St. Luke's Hospital, New Bedford, Mass., showing general plan and process of development.



Figure 14. Harrisburg Hospital. Exterior of new nine-story building.

which were modernized by adding to the existing buildings without destroying any of the old structure.

### Modernizing by Replacing Old Structures

In the case of the Auburn City Hospital, Auburn, N. Y., some of the old buildings were so poor and ill-fitted for alterations that some of the existing buildings are to be removed and the new fireproof structures put in their places, bringing the plant into thorough harmony with the best hospital planning.

The old wooden ward (shown in dotted lines in figure 15) is to be removed and in its place a new fireproof pavilion is being built. This contains the maternity department, private rooms and small wards, also the out-patient, the isolation, and the physiotherapy departments.

The old administration building is to be removed and a new administration building erected containing the administration, the nurses' dining rooms, the children's and the operating departments.

Taking advantage of the drop in the land, an extra story is gained in the new building and the administrative office made more available from the street.

A system of parking for motors is made available in a space away from the street and far enough from the hospital not to disturb the patients, as will be noted in the block plans.

While we might mention scores of examples of reconstructed and re-conditioned institutions of more or less interest, it is well nigh impossible to obtain the ideal results which might be achieved in building from the inception of the plan. But as we cannot always destroy our old buildings, it is our duty to make the old institutions as workable as possible.



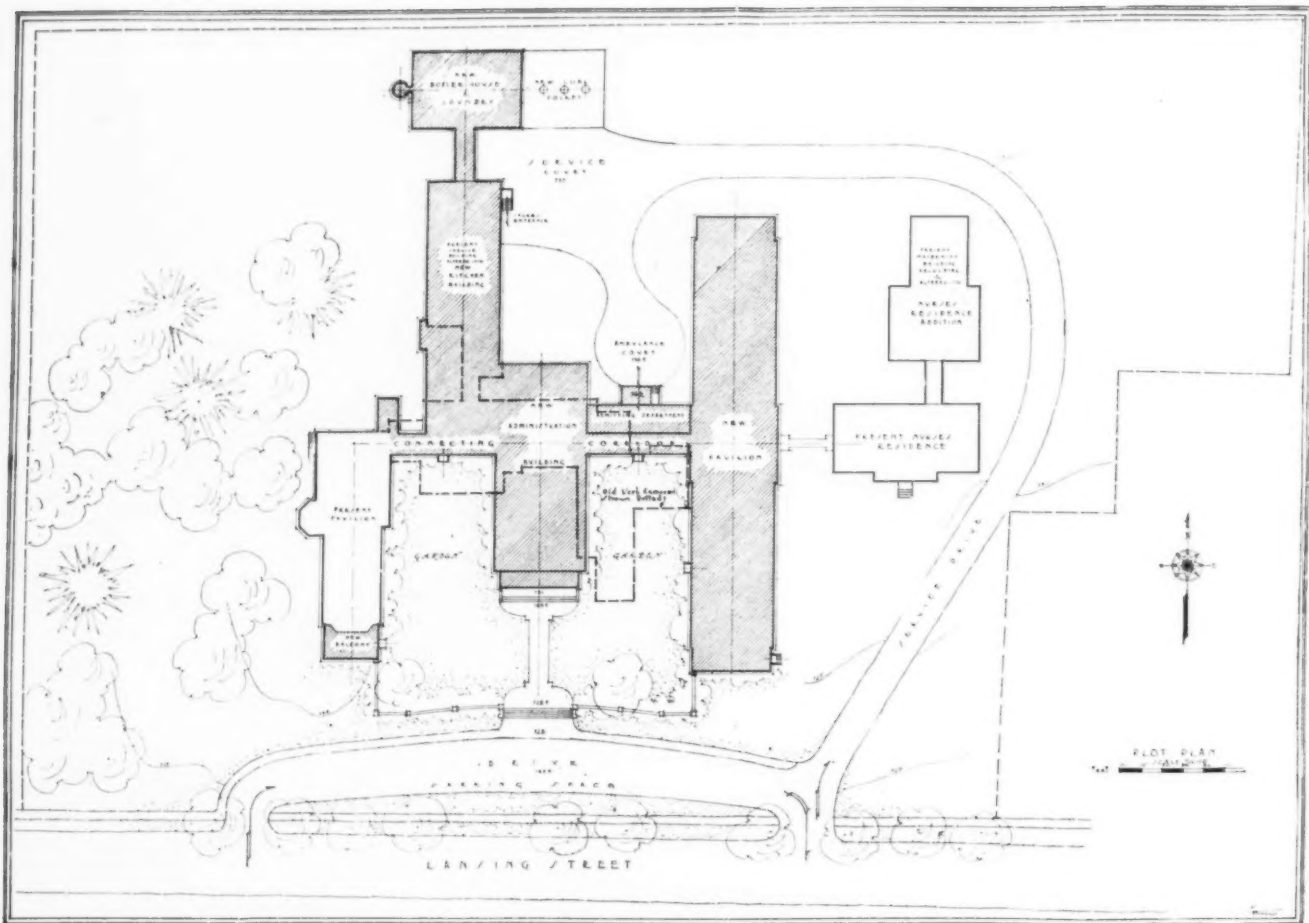


Figure 15. Auburn City Hospital. General plan, showing new extensions and connection to old building.

## RESULTS FROM THE CARE OF CRIPPLED CHILDREN

The Conemaugh Valley Memorial Hospital, Jamestown, Pa., recently issued a booklet "Results from the care of Crippled Children" describing the service of the Kiwanis orthopedic ward at the hospital.

In the foreword the reason and purpose of the booklet are set forth in statements of interest in regard to services offered by the orthopedic ward. The statement of the reason is as follows: "The reason for this booklet is that one-third of the orthopedic cases, which appeared at the first clinic held by the Kiwanis Club of Johnstown, (November 16, 1923) failed to return. Some of those who did return, decided in their own minds that nothing could be done to help their children and so they took them away from the hospital after they had been admitted for treatment.

"The purpose of this booklet is to show those parents some of the work that has been done in the hope that they may change their minds; and that others may be so inspired.

"The result of this clinic disclosed 137 orthopedic cases and thirty non-orthopedic, or medical cases. Of the orthopedic cases some were "in and out" patients requiring no stay at the hospital, but came for muscle exercises; some were treated and paid for by their parents; and, as the pages of this booklet show, quite a number needed help. Other clinics have been held at the hospital and the total number of cases treated to date, (including those in this booklet), amounts to between fifty and sixty children."

## PUBLIC LIBRARIES EXTEND SERVICE TO LOCAL HOSPITALS

That public libraries are extending their services to local hospitals is evidenced by recent reports from hospitals in different parts of the country.

The public library at Gary, Ind., recently extended a complete library service to hospital patients of that city through which patients may select their books as though they were able to visit the city library in person. Under the plan which is soon to be put into effect, representatives from the library will visit the hospitals on certain days each week and find out from all patients just what books they wish to read. Those who are unable to choose what they wish to read will be aided by the truck loads of books and magazines which will be rolled into the different rooms, and the library representatives will advise patients concerning the books.

At the Mercy and Hackley hospitals, Muskegon, Mich., an assistant from the public library distributes books twice a week to patients in wards. There are picture books for children, and books about babies for the new mothers. The Italian who can't read English is given an Italian book and the mechanic who was injured in his work is given a machine shop book if he wants one.

In Galesburg, Ill., there are two hospital libraries under the direction of the public library. The system has been in operation in Galesburg for three years during which time the circulation has reached 59,210.

There is no kind of achievement equal to perfect health.

## SPECIAL CONSIDERATIONS IN PLANNING SISTERS' HOSPITALS

BY L. A. BRIELMAIER, E. BRIELMAIER AND SONS, MILWAUKEE, WIS.

**W**HAT are the special considerations in planning Sisters' hospitals? This can be answered in comparatively few words, since there is practically no difference between a Sisters' institution and one conducted by others; the manner of treatment of the patients is identical. However, there is a considerable difference in the management of the two types of hospitals, but this subject does not come within the scope of hospital planning.

First of all, a Sisters' hospital, regardless of size, should be modest and dignified in architecture, and should be of substantial construction. In arranging the interior, the surroundings should be carefully surveyed to arrive at the correct requirements and demands of the people whom the hospital is expected to serve. It should be practical, convenient and compact, assuring economical construction as well as maintenance, in order to give service at the most reasonable rates.

### Demand for Economy of Construction

This does not mean economy at the cost of service in the conduct of the institution, but rather the elimination of unnecessary waste and extravagance in space to insure efficiency of operation. It must be considered that Sisters' hospitals compete with public institutions, or endowed private ones, where more money is available for construction and upkeep. Considering the Sisters' limited means, particularly at the time of building, as well as the charitable nature of these institutions, every economy needs to be practiced, in the construction as well as in the operation of the building. This limitation of funds, in fact, makes it all the more imperative to plan for the efficient operation of the institution.

The Sisters in charge of hospitals have pledged their lives to the care of the sick without individual profit or gain. It seems only fair, then, that they should have the full cooperation of the able and experienced architect, not only in planning for them such facilities and conveniences as will expedite efficiency, but, to provide for the Sisters, themselves, such little comforts as may help to keep them mentally and physically fit for their mission. This applies to the Sisters entrusted with the management of the institution, as well as those spending their entire time in the kitchen or laundry. In fact, it is the opinion of the writer that special consideration should be given to the latter, in view of the nature of their work and surroundings. In order to give satisfactory results and do justice to those employed in each department, sufficient space should be allowed, and provisions made for an abundance of light and air to make the environment as cheerful as possible.

### Separate Room for Each Sister

The Sisters should have individual sleeping rooms, which should be grouped, and preferably located in a section, or wing, on an offside of the house. This arrangement allows them the privacy and comfort of a home, so much cherished by every human being. This so-called Sisters' section, or wing, should be so placed as not to interfere with the planning of the hospital proper. The Sisters' quarters represent what, in other hospitals, would be nurses' rooms.

An attractive chapel should be provided, and can properly be termed "the heart and soul of a Sisters' hospital." From this point radiates the very life of the institution, as it embodies the Sisters' dominating religious motive and

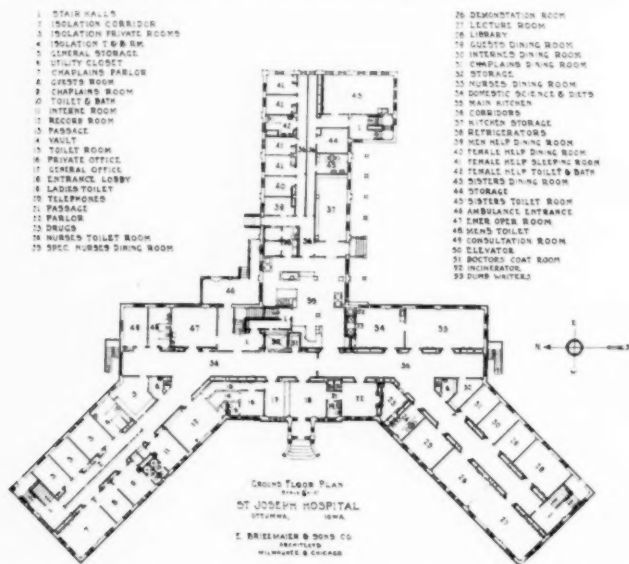


The new 50-bed home for St. Joseph's Hospital, Ottumwa, Iowa, now in the process of construction. It was designed by E. Brielmaier & Sons, Milwaukee, Wis.

their self-sacrificing devotion to the sick and suffering. The chapel should be conveniently located since it is there that the Sisters retire to pray in their spare moments.

### Chapel Should be Conveniently Located

The chapel should also be regarded as an important part of the surroundings for the patients



of this faith, as it is a factor influencing the patient's mental state. It should thus be conveniently located for easy access from the sick rooms, and also be in close connection with the Sisters' quarters. The size of the chapel naturally depends upon the number of Sisters and capacity of the hospital. The interior of the chapel should be designed along simple architectural lines, and should exude comfort and rest, as well as devotion. An over-elaborate chapel executed in confusing architecture would have an opposite, or detrimental effect. The acoustics should be as nearly perfect as possible.

### Convent Wing in Rear Addition

The arrangement shown in the accompanying illustrations of a Sisters' hospital now under construction works out very satisfactorily. This rear addition might be called a convent wing, as it is set aside for the exclusive use of the Sisters operating the hospital. It is in close proximity to the hospital proper, yet separated in a way, allowing the Sisters a certain amount of privacy and rest. A separate stairway is provided, furnishing access from the basement rooms and kitchen to the sleeping quarters on the first floor, as well as to the chapel on second and third stories. Another convenient arrangement calls for the chapel between the hospital and the convent wing, with access from both sides. A Sisters' infirmary

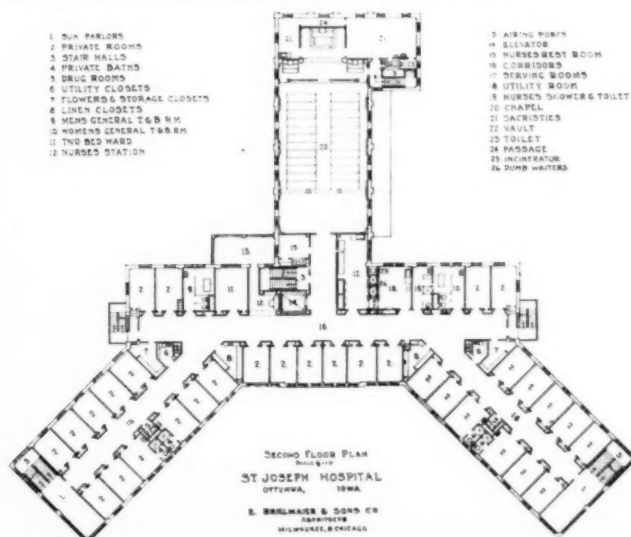


and isolation department, taken off the rear of the chapel, with oratories adjoining the sanctuary, is an additional feature which, in many places, has worked out very satisfactorily.

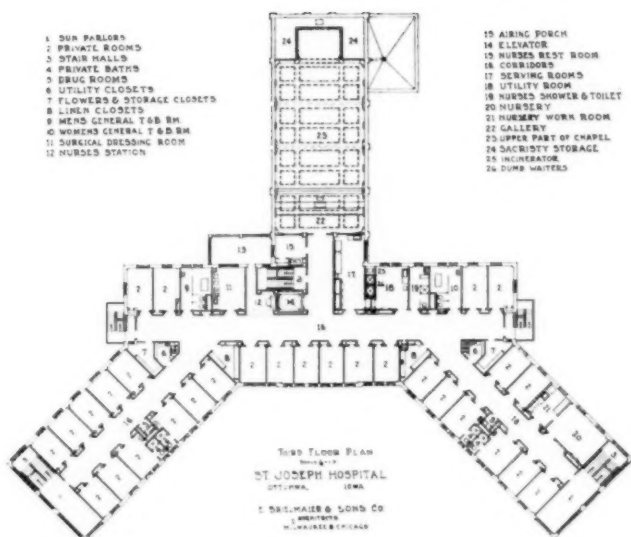
### Accessory Rooms

The Sisters' sleeping rooms need not be large, as a room nine by twelve feet is generally considered ample. There should be provided a good sized community room, a refectory, sewing room, porch, locker rooms, linen room, wash room and bath. These rooms constitute practically all the accommodations required for the Sisters. Since the Sisters attend to laundry and ironing, wherever possible these rooms should be placed outside the hospital, with plenty of light and air, and access through passageways either above or below ground. There should be connected to the laundry and ironing room a Sisters' dressing room, with toilet, also a fair sized rest room with light and air.

Referring to the hospital proper, the arrangement of all hospitals is alike, depending, of course,







upon the nature of the treatments to be given therein. Therefore, it is unnecessary to dwell upon this phase of hospital planning.

For mutual benefit and the continual improvement of hospital efficiency, the hospital Sisters hold frequent meetings to exchange ideas, and call upon experts to present to them technical knowledge of various hospital problems. With this in mind, the new Marquette Hospital College at Marquette University, Milwaukee, Wis., was



organized to give the Sisters, taking special courses, advanced training in organization, management, and hospital planning, as well as training on the technical side of hospital service.

### COLUMBIA-PRESBYTERIAN HOSPITAL CENTER UNDER WAY

Ground was broken January 31, and construction has already commenced on New York City's new medical center which is being developed under the direction of the joint administrative board of Columbia University and the Presbyterian Hospital.

General William Barclay Parsons, chairman of the joint

administrative board, presided. Representing the Presbyterian Hospital was Mr. Dean Sage, president of the board of managers. Addresses were made by President Nicholas Murray Butler, Columbia University, and by Dr. C. Floyd Haviland, chairman of the New York State Hospital Commission, and by Governor Alfred Smith.

The joint administrative board which has the promotion of the medical center in hand is made up of representatives of the several institutions of the center and is at present composed of General William Barclay Parsons, chairman; Dr. Walter B. James, Edward S. Harkness, John G. Milburn, Henry W. de Forest, Dr. Walter B. James, and Dean Sage, with C. C. Burlingame as executive officer, and Dr. William Darrach, dean of the medical school, acting in an advisory capacity.

### NEW JERSEY HOSPITAL ASSOCIATION MEETS AT NEWARK

One hundred hospital representatives attended the meeting of the New Jersey Hospital Association held at the Newark City Hospital, January 15, 1925. The program centered around three papers and a round-table discussion. The address of welcome was made by the Hon. Frederick C. Breidenbach, mayor of Newark.

The following papers were presented: "Hospital Associations and their Functions," by Mr. Richard P. Borden, trustee, American Hospital Association, Fall River, Mass.; "Hospitals as Seen in Perspective," by Dr. E. H. Lewinski-Corwin, executive secretary, public health committee of the New York Academy of Medicine, New York, N. Y.; "Hospitals as Seen in Their Relation to Public Health Activities," by David I. Kelley, secretary of Essex County Park Commission, Newark. These papers were followed by a round-table discussion under the chairmanship of Mr. W. C. Lyon, superintendent, Mercer Hospital, Trenton.

Dr. Paul Keller, superintendent, Beth Israel Hospital, Newark, was chosen president for the coming year, and Mr. Thomas R. Zulich, was reelected secretary.

### VERMONT HAS CHILDREN'S REPAIR FUND

Organized work on a children's repair fund is progressing in Vermont under the auspices of the Thomas Thompson Foundation, Brattleboro, in collaboration with the aid of local Red Cross chapters. The purpose of the fund is twofold: first to get the means ready to pay for the necessary medical and dental service; and second, to start cooperative collective action which is generally acknowledged to be the only way to reduce costs and make the work possible.

One of the committees, it is reported, has already reduced its children's defects by two-thirds, and a great amount of work has already been accomplished. The removal of tonsils, which formerly cost parents \$45 a piece now averages from \$12 to \$18 a piece.

Dr. Walter H. Brown, director of the child health demonstration at Mansfield, Ohio, has been appointed director of the demonstration which is to be made in Marion County, Oregon.

"You say he is a modern baby?"

"In every sense of the word."

"For instance?"

"He was nurtured in an incubator and lulled to sleep with a radio lullaby."—Florida Times-Union.

## WARDS OR SEMI-PRIVATE ROOMS: REPORT OF A SYMPOSIUM\*

By HENRY C. WRIGHT, DIRECTOR, HOSPITAL INSTITUTIONAL BUREAU OF CONSULTATION, NEW YORK, N. Y.

**B**EFORE the term "semi-private rooms" came into use, there was no confusion with regard to the spaces occupied by patients. They either occupied private rooms or wards. The term semi-private is of comparatively recent origin. It is probable that the pressure for hospital service on the part of patients who desired to pay, and yet could not pay the regulation rate for private rooms, developed the type of accommodation

\*The writer wishes to express his appreciation of the time and attention devoted by the superintendents in answering the questionnaire on which this article is based.

which has come to be called semi-private. The term, however, has had no commonly accepted definition. It is applied to rooms having from two to eight beds. Some hospitals restrict the term to rooms containing two beds, and call all rooms with more than two beds, either private, public, or general wards. Others make the division line at three beds; still others, at four, others at six, and, as before stated, one important hospital in the United States calls a room with eight beds a semi-private room.



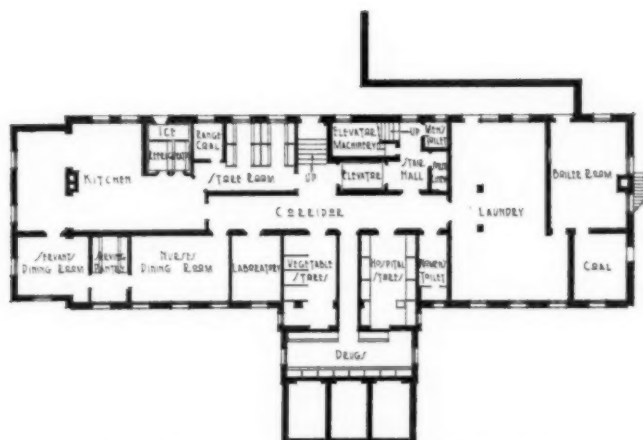
Front view of the new Soldiers' and Sailors' Memorial Hospital of Yates County, Penn Yan, N. Y., erected last year under the direction of Stevens & Lee, architects, Boston, Mass. Floor plans are shown on the two following pages.



Glimpses of the operating department.



A typical private patient's room.



Ground floor plan, Soldiers' and Sailors' Hospital.



First floor plan, Soldiers' and Sailors' Hospital.

This article is a discussion of this and certain other questions relating to semi-private rooms and wards, and is an attempt to arrive at a consensus of opinion as to what the definition of a semi-private room should be. To secure opinions from superintendents of leading hospitals, a questionnaire was sent to forty-six of the most prominent hospitals in the United States and Canada. Replies were received from the following hospitals:

Boston City Hospital; Peter Bent Brigham Hospital, Boston; Massachusetts General Hospital, Boston; New Haven Hospital, (Connecticut); New York Hospital, New York City; Brooklyn Hospital, Brooklyn; Long Island College Hospital, Brooklyn, N. Y.; Methodist Episcopal Hospital, Brooklyn, N. Y.; Jewish Hospital, Brooklyn, N. Y.; Harrisburg (Pennsylvania) Hospital; Pennsylvania Hospital, Philadelphia, Pa.; Presbyterian Hospital, Philadelphia, Pa.; Jefferson Hospital, Philadelphia, Pa.; Johns Hopkins Hospital, Baltimore, Md.; Western Pennsylvania Hospital, Pittsburgh, Pa.; Cincinnati General Hospital, Cincinnati, Ohio; Cleveland City Hospital, Cleveland, Ohio; Indianapolis City Hospital, Indianapolis, Ind.; Cook County Hospital, Chicago, Ill.; City of Detroit Hospital, Detroit, Mich.; Grace Hospital, Detroit, Mich.; Buttrworth Hospital, Grand Rapids, Mich.; Barnes Hospital, St. Louis, Mo.; Montreal General Hospital, Montreal, Can.; Michael Reese Hospital, Chicago, Ill.; Mercy Hospital, Chicago, Ill.

It will be observed that the foregoing list is composed of a number of leading hospitals. The questionnaire sent out was as follows:

1. What is the largest number of beds in one room you would classify as a semi-private room; should all rooms in the hospital containing more than this number of beds be called wards?

2. Is a ward to be defined by the number of beds; or, is it to be defined as a room in which free treatment is given, both by the hospital and by the attending physicians and surgeons?

3. In your own hospital, are physicians or surgeons permitted to charge a patient in a ward, when that patient is charged the ward rate for maintenance?

4. What do you consider the maximum number of beds advisable in one room, and under the supervision of one head nurse?

5. What number of nurses would you consider needed for the nursing of general medical and general surgical

wards having an aggregate capacity indicated below:

- One medical ward of 24 beds, and
- One surgical ward of 24 beds.
- Three medical wards of 8 beds each, and
- Three surgical wards of 8 beds each.
- Four medical wards of 6 beds each, and
- Four surgical wards of 6 beds each.
- Six medical wards of 4 beds each, and
- Six surgical wards of 4 beds each.

In asking the above question, it is assumed that the smaller wards would have observation windows in the corridor walls, to facilitate night supervision.

6. Do you consider natural window ventilation sufficient for ward purposes, or would you provide artificial ventilation?

7. For ward purposes, do you prefer (a) the long axis of the bed at right-angles to the exterior wall or (b) parallel with the exterior wall?

It is assumed that where beds are placed parallel to the exterior wall in a large ward, a glass screen would separate ward divisions.

The replies to this questionnaire show marked interest on the part of superintendents, since many of the replies were extended, and indicated that much thought and time had been given to the matter.

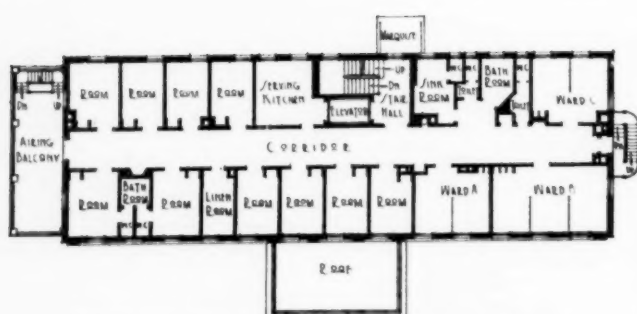
Twenty-five replied to the question as to the largest number of beds in one room which they would classify as semi-private. These replies were distributed as follows:

Number of replies	Beds in room
9	2
3	3
8	4
1	5
3	6
1	8

#### Majority Prefer Two Beds in Ward

It will be noted that three beds in a room is preferred by very few. They either prefer two beds or four beds, and the majority prefer two. I think it may be clearly and definitely stated that, basing an opinion on the replies received, no room should be called semi-private which has more than four beds in it.





Second floor plan of the Soldiers' and Sailors' Hospital.

A good share of those who prefer to limit the term semi-private to two beds in a room, also use the term "private wards," and let that term apply to any number of beds in a room where the surgeons are permitted to charge for their services. In some of these hospitals, the public (or, as some of the hospitals call them "general") wards are large, while the private wards contain from four to eight beds. In these private wards, the surgeons have as much liberty to charge for their services as they have in private or semi-private rooms, although they are expected to reduce their charge to correspond to the lesser rate charged by the hospital. In general, it may be stated that the great majority of hospitals prefer to use the term semi-private, and to confine the term to a room occupied by not more than four beds, and to use also the term "private ward," wherein, as before stated, surgeons may charge the patients for their services; and a ward wherein free patients are cared for, called either "general ward" or "public ward."

Nearly all agree that a ward should be divided on the basis of the number of beds rather than on the basis of whether free surgical and medical services are offered, or whether charges are made for these services.

#### Maximum Number of Beds

An endeavor was made to secure an opinion as to the maximum number of beds that could advantageously be placed in one ward, under the supervision of one head nurse. Of those replying, ten held that the number should not exceed twenty-five; five would permit the number to go to thirty-two, and six would permit the number to range from thirty-three to forty. These replies make it reasonably clear that the majority of hospital superintendents prefer a ward with not over twenty-five beds. In this connection, a good many expressed the opinion that if the hospital could afford the additional nursing required, no ward should contain as many as twenty-four beds.

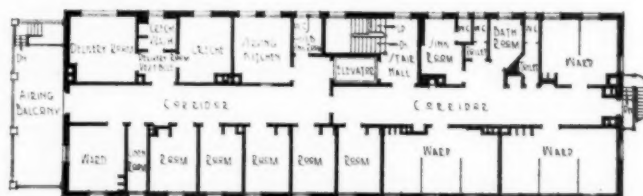
An effort was made in the questionnaire to secure an opinion with regard to the relative cost of nursing twenty-four patients in one open ward,

compared with the same number of patients distributed in wards of eight beds each, six beds each, and four beds each. It was assumed that patients in the smaller wards would be in contiguous rooms, and that these rooms would have view windows into the corridor, to facilitate night supervision. This question did not receive quite so large a proportion of replies as did other questions in the questionnaire, owing largely to the fact that some felt that the ratio of nurses to patients could not be definitely stated without knowing the condition of the patients.

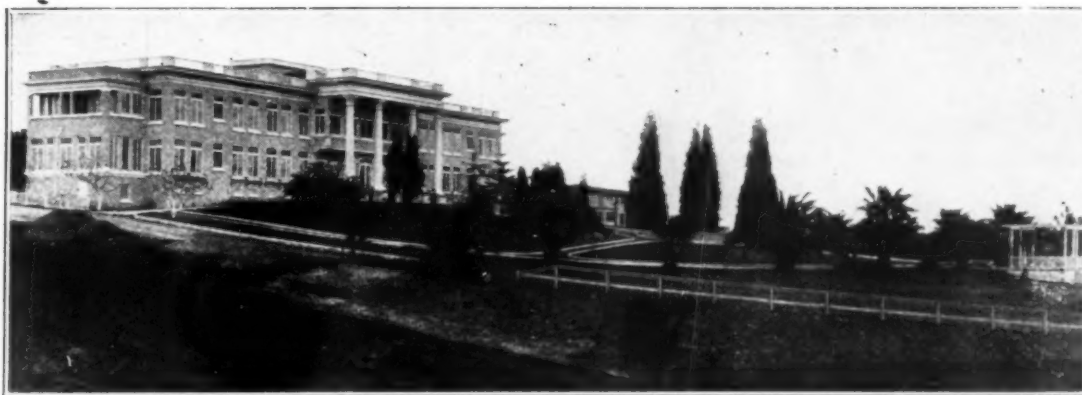
Most of those who did reply, however, assumed that whatever the condition of the patients might be, they would be considered to be in the same condition whether in the smaller wards or in one larger ward, so that the comparative ratios in either case might show the same variation. The accompanying table gives the majority opinion with regard to the maximum number of nurses needed during the day for day service to twenty-four patients, grouped as indicated above.

Rooms	Beds	Highest No. of replies		Next highest	
		Number replying	Number nurses	Number replying	Number nurses
1	24 beds				
	Medical ....	9	5	5	6
	Surgical ....	8	6	6	5
3	8 beds				
	Medical ....	9	6	3	5
	Surgical ....	8	6	3	5
4	6 beds				
	Medical ....	5	6	4	8
	Surgical ....	5	6	4	8
4	4 beds				
	Medical ....	6	6	4	8
	Surgical ....	6	6	4	7

Inasmuch as but eighteen persons made reply to this question, the table incorporates the replies of considerably more than the majority of those replying. The replies were in some regards quite surprising, and quite different from the generally expressed opinion that it takes many more nurses where patients are divided into smaller groups than where they are in large groups. It will be noted that the largest number agreeing upon one statement as to the number needed, expressed the opinion that no more nurses are needed when twenty-four, either medical or surgical, patients are cared for in wards of eight, six, or four beds each, than when all twenty-four patients are in



Third floor plan of the Soldiers' and Sailors' Hospital.



The Porter Sanitarium, Los Angeles, designed by J. H. Roberts, Long Beach, Calif.

one large room; and all of these agreed, with the exception of one group, that six nurses could care for the twenty-four patients.

The next largest group of those agreeing upon one opinion, felt that six nurses would be required in a medical ward of twenty-four beds, and five nurses in a surgical ward of like size; and no more nurses would be needed for the same number of beds divided into three rooms. But when the patients were placed in rooms of six beds each, or four beds each, they felt that eight nurses would be required for the nursing of twenty-four patients. In short, in considering the number of nurses needed for twenty-four beds divided into small units, more people replied that the number need not be increased, than replied otherwise.

#### Small Wards Require More Nurses

It is difficult to arrive at a fair consensus of opinion from answers on so complex a question. The wording of the individual letters helped to a certain degree, and it is the writer's personal opinion, based on the letters from which the statistics were taken, and from his personal observation, that it is highly probable that to nurse patients in small units, say, in rooms of six or four beds, will require on an average, about twenty-five per cent more nurses than when the same number of patients is cared for in large open wards. This statement applies to the subordinate nurses, usually pupil nurses and nurse attendants. It is probable that the ratio of head nurses need not be increased. Although no definite statement can be made, it seems probable that the cost of nursing patients in rooms of four or six beds each would be 15 to 20 per cent more than the nursing of a like number of patients in large wards. Some, of course, would place the ratio of nurses and the extra cost higher than this. On the other hand, a greater portion of those who have replied to the questionnaire, would put the percentage of increase considerably less than that named.

The following question was asked:

"In your hospital, are physicians and surgeons permitted to charge a patient in a ward when that patient is charged the ward rate for maintenance?"

Out of twenty-five replying, twelve stated that surgeons were not allowed to charge. Some of the twelve, however, made an exception of workmen's compensation cases.

Inasmuch as there has been quite a controversy with regard to the need for artificial ventilation and its practicability, the following question was asked:

"Do you consider natural window ventilation sufficient for ward purposes, or would you provide artificial ventilation?"

#### Natural Ventilation Preferable

Out of twenty-five who replied to this question, sixteen stated that natural ventilation was preferable. Four would provide natural ventilation for intake, and an artificial exhaust system. Four stated that it depended upon the type of hospital. These replies make it fairly clear that in the minds of these superintendents, natural window ventilation, all things considered, is the most desirable for general hospitals.

Superintendents were asked whether they would prefer ward beds arranged with the long axis of the bed at right-angles to the exterior wall, or parallel therewith. Of the twenty-three replying, nineteen preferred the bed at right-angles to the exterior wall, and only three considered that the bed placed parallel was more desirable. Considering the fact that very few superintendents in the United States have been familiar with a hospital with beds running parallel with the exterior wall, and with window openings adjusted to such an arrangement, it is not surprising that so large a proportion should advocate the arrangement with which they have had continuous experience. It seems to the writer that this is an open question, which should receive fuller and more careful consideration on the part of super-



New nurses' home, Hurley Hospital, Flint, Mich., designed by Wright and Nice, Flint.

intendents, since those who have become accustomed to the parallel arrangement commend it very enthusiastically.

In reading over the letters, one is impressed with a strong feeling that large wards should not be resorted to in new construction. Some of the superintendents of municipal hospitals stated their belief that no ward should contain more than sixteen beds, though a few superintendents with long experience in large hospitals, believe that patients receive better nursing care where there are from twenty to thirty in a ward. It is the writer's feeling that in new construction, where the floor plan will permit, if large wards are necessitated by operating finances, it is advisable to so orient wards that one head nurse can supervise two wards of not over fourteen to sixteen beds each. A smaller number would, of course, be preferable. The smaller the ward, the more flexible becomes the hospital, and its spaces can be more readily adjusted to the needs.

#### ON SELECTING CASES FOR THE COUNTY TUBERCULOSIS SANATORIUM

The subject of the selection of cases for county sanatoriums is treated by Dr. Fred M. Meixner, Peoria, Ill., in a recent number of the *Illinois Medical Journal*. The subject is one of widespread interest, and this discussion was prompted by the number of inquiries received concerning what cases should be admitted to the county sanatorium.

Dr. Meixner points out that the chief line of demarcation

should be those cases which can or cannot be benefitted by treatment in the sanatorium. The latter should not be admitted. He brings out that the overhead cost per patient must be seriously considered which, with a small institution, is relatively large. A small institution cannot pay adequate salaries for a superintendent and medical directors and the work offered is not sufficient to attract men who might make tuberculosis their life work, and the small sanatorium has no place in the training of experienced tuberculosis workers.

He summarizes the subject in the following points:

- (1) A county institution must gain the confidence of the community.
- (2) The selection of cases calls for good judgment, considering the pathological, social, financial and moral side of each case.
- (3) Early cases should, as a rule, have the preference over moderately advanced cases.
- (4) An educated and careful consumptive is not a menace to the community and one duty of a county institution is that of instruction in the prevention of tuberculosis.
- (5) It is better to have one too many "boarders" than to refuse admittance to cases when beds are empty or to overlook a case that needs the help of the sanatorium.
- (6) The county sanatorium should be the tuberculosis diagnostic station for its community and all doubtful cases should be studied there.
- (7) The training of tuberculosis workers is a very essential part of the sanatorium program.
- (8) In each particular case the best and most complete service must be rendered, based upon the case alone, regardless of the stage of the patients' particular pulmonary disease, for tuberculosis is not alone a medical disease—it is a social disease and the community phase must be viewed as being as important as the medical phase, and should be as thoroughly diagnosed and studied and finally, treated.



## PLANNING THE HOSPITAL'S RECORD ROOM\*

BY CLARENCE L. NEU, B.A., PRESIDENT, PHYSICIANS' RECORD CO., CHICAGO, ILL.

THE record room as a definite and integral part of the hospital has not yet been accepted as a vital necessity. But there is evidence that conceptions are changing. No one thinks of building a hospital without an operating room and indications are that in the near future no one will think of omitting the record room from the plan of the institution. An examination of over one hundred architects' plans shows unmistakably a realization on the part of the hospital planner that the record room is a most important place where a valuable and essential part of hospital work is going on.

In these paragraphs we are considering the record room from the architectural or construction standpoint, commenting briefly on the proper arrangement of the equipment. Our discussion refers to the room where the details of the case history—the bedside notes, the graphic charts, the pathological reports and all the rest—are assembled, checked by the person assigned to the work, cross indices made and histories filed for reference. We are not considering for the moment the "storage room" where the records finally are deposited.

The questions we are concerned with are: Where should the record room be? What should be its size? How should it be situated with reference to accessibility for those who have need to consult the material collected and filed there? What should be the arrangement of its equipment?

## Proper Provision for Records a Necessity

The importance which in the last few years has been placed upon records and record keeping by recognized organizations, such as the American College of Surgeons, the American Hospital Association, the Protestant Hospital Association, the Catholic Hospital Association, various boards and state departments, has made it necessary for the hospital administrator to consider proper provision for the assembling, filing and storing of the case record material. The common practice in the older institutions was to find a spare room for this work. It might be in the basement next to the kitchen or it might be on the top floor as a neighbor to an operating room. A great number of institutions still have no provision whatever for this essential work.

It is interesting to note that in a series of model

plans published ten years ago by a prominent hospital consultant and a widely known hospital architect not one of the sketches of institutions ranging from twenty-three to ninety-seven beds had any provision whatsoever for record keeping or storage nor was the subject referred to in the text.

The newer plans, however, indicate definite consideration of the problem. It is fast becoming a fixed idea that the record room is quite as essential a part of the plan as the office itself. To show the present attitude we need but to point to the architectural competition conducted in 1923 by The Modern Hospital Publishing Co., Inc. The plans were limited to hospitals of from thirty to forty beds and one of the requirements was the inclusion of a clinical record room which might be combined with office or doctor's consultation room. It was deemed advisable by the planners of this contest that even as small a hospital as one of thirty beds should have a separate record room or at least separate space provided for the work. Much, of course, depends upon the point of view of the administrative head or those responsible for the erection of the hospital. If they do not recognize the importance of the records themselves, they will not recognize the necessity of building into the structure the proper facilities for keeping and preserving this valuable material.

## Small Per Cent Have Definite Record Rooms

Our investigation covered the careful examination and analysis of 126 architects' plans of hospitals ranging from 80 to 450 beds. Of the 126 institutions, all of them built within the last few years, thirty-four had definite record rooms. This is about 27 per cent. Seventy-three per cent had no visible accommodation for this department. Some of the plans examined were those of additions to already existing institutions and they included suitable record rooms which had not been provided in their original buildings. In some few cases we found combination rooms where other clerical work was carried on besides record keeping. In three cases the record room was in conjunction with the hospital library.

The rooms varied in size from four by eight feet to eighteen by thirty-two feet. The average was about 195 square feet or approximately a room twelve by sixteen feet.

In most cases, the general location of the record room was in what we may term the administrative section of the hospital, the group of rooms in-

\*This is the first of two articles by Mr. Neu on the hospital record room. The second article will deal with record forms and other equipment of the record room.

cluding the general office, the superintendent's office, the office of the directress of nurses and the conference rooms. Quite a number, however, were not so advantageously situated. We found one in the dispensary building which was connected with the hospital by a passageway. We noted one adjacent to a private room and the dispensary; another whose next door neighbors were the maid's room and a bathroom. Then there was one in the basement next to the drug storage room and one closely associated with the dental pharmacy and the out-patient department office.

The impression one gets from some of these instances is that while the planner had in mind the necessity and value of a separate room for records, the designer fitted it in where he had some space left. About the only place where we did not find a record department was in the boiler room, for which oversight there is cause to be thankful.

As we have pointed out, the record room is now being recognized by administrators as a necessary part of the hospital structure. Its location, its size, its relation to other departments must, therefore, have definite consideration. The importance of a full and illuminating case record is now being more fully realized in hospital work. Why, then, should not the fullest consideration be given the proper facilities for the handling, indexing and storing of these records? Any record is valuable only insofar as it is complete and filed so as to be easily accessible.

Granting these premises, what is the logical location of the record room? There can be little doubt that the record room is best situated in the section of the building where the administrative work is carried on. This, almost without exception, is on the first floor and one finds here the offices, the staff rooms, and the conference rooms. Since the record room is a reference room to a large extent it should be so placed as to afford easy access for those requiring its services. One authority has said that in some hospitals the clinical records of both in- and out-patient departments are assembled in a single center. It is desirable to locate the library near the clinical record room. Not every hospital maintains a library but where there is one, there is no question of the advisability of the plan suggested by the authority quoted. Where the record room and the li-

brary are in close proximity there is an opportunity for the proper examination of any particular history, since there is at hand the great volume of reference material which will make the study of the greatest value.

The size of the record room will, of course, depend upon the size of the institution. We have already pointed out that in the record rooms investigated the average size was about 195 square feet or about twelve by sixteen feet. To decide the extent of the space to be used we must have an

idea of what is going into the room. There must, of course, be a good sized desk where the historian or other person assembles and checks the records to see that all details are properly filled in. Often some important point is neglected by the intern or physician in charge, some signature has been omitted or some other defect discovered. The record is held until the history is completed. A rack with compartments for these incomplete histories is a convenience, though not a necessity.

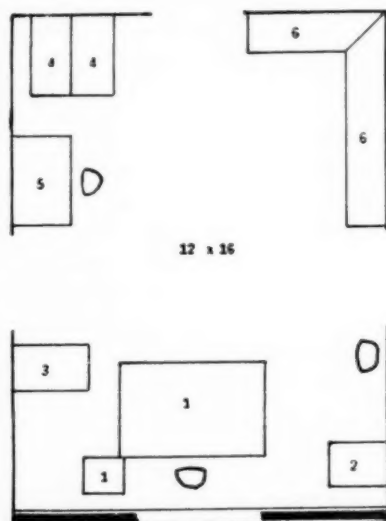
Then the record room should contain the files for cross indices. The extent of the cross indexing will depend upon the thoroughness which the hospital attaches to the matter of records. Some institutions will maintain indices

by name, diagnosis, complications, operations and deaths; others will content themselves with only one or two of these classifications. So the filing space required for the cross indices will depend upon the number of cases handled and upon the extent to which the indexing plan is carried out.

There must be some provision for a current file of completed histories—those to which there will be more or less reference. Probably in the average hospital one or two four-drawer vertical files will suffice. It is not recommended that the record room carry the histories covering any considerable length of time. There should be a storage room where the accumulating records may be classified and kept in good order for the occasional reference to which they are subjected.

### A Suggested Plan Showing Location

With these suggestions in mind we are presenting two sketches one showing what we consider an advantageous location for the record room, the other indicating an arrangement of the necessary equipment.



Enlargement of record room showing proper placement of furniture.

Arrangement of record room furniture:  
1—desk with typewriter attachment;  
2—sectional file for cross indices; 3—  
rack for incomplete histories; 4—vertical  
files for histories; 5—tables; 6—  
cupboards for supplies.

Let us consider first the sketch showing location. In the plan presented, the usual placement of the general office and the reception room on either side of the entrance is followed. This seems to be efficient and is found to be the layout for a very large number of institutions. We would place the record room next to the office and leading from that the visiting physicians' consultation room. The record room, it will be seen, opens into the office, into the consultation room and into the corridor.

The logic of such a plan is obvious. One of the principal uses of the record room is reference to records. Under our suggested plan the record room is accessible to the office where it is occasionally necessary to refer to certain matters which are shown in the records. It is accessible to the consultation room where reference to histories is absolutely essential. It is accessible to the outside through the corridor from which interns and others may enter. The record room thus serves the purpose for which it is maintained. It provides accessibility to the records for all those whose business it is to study the data for scientific research and other purposes.

#### Central Location Needed

A record room located away from the center of administrative activities is at a disadvantage. If it is hard for the attending physician or the intern to get to the place where the records may be consulted, he is going to neglect the matter whenever it is not urgent and a good deal of the reference value of the record will be lost. Furthermore, if the physician has occasion to call upon the person assigned to the record room for a history or for a group of charts covering a certain disease, convenient central location means the saving of time and effort for everyone. Of course, a reference room of this kind should be protected from the intrusion of the general public.

Proper light and ventilation are considerations which are important. There is no argument about the loss of efficiency in working places which are not properly equipped in matters of lighting and ventilation. Too often we find so-called record rooms which have not been planned in the construction of the hospital deficient in these two particulars. Our sketch shows an outside room in which cross ventilation may be secured.

We already have said that the essential equip-

ment of a record room includes a desk, a rack with compartments for incomplete histories, files for the cross indices and files for the more recent charts.

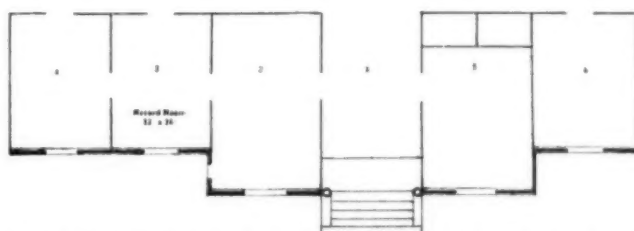
It is not our purpose in these paragraphs to discuss in detail the kind of equipment best suited to the work of the record room but it will be necessary to suggest at least the styles of files and other furniture so that we may decide upon the placing of the articles in accordance with their dimensions and the space allowed.

The desk should, of course, be the flat-top style and it should be large enough to take care of the great amount of material which the historian has to handle. A good size is fifty-five by thirty-two. There should be an arrangement or attachment for typewriter. The cross indices should be filed in sectional cabinets which may be built up and expanded as needs require. We suggest the use of four by six cards, a standard size. The cur-

rent charts will be filed in vertical letter files, four drawers high. We are assuming the use of the standard size record which is eight and a half by eleven.

Our sketch shows the desk placed near the window where light and air are good and where essential records are within easy reach. At the right of the desk are the sectional files for indices by name, disease, and so forth. At the left of the desk is the rack for incomplete charts. Near the inner wall, next to the door into the corridor, are the current history files. It is obvious that no definite rules can be set down for the arrangement of the furniture in a room. The available space determines the matter. But accessibility should control. The work of the record room, as well as that of any other department, should be done with the least number of movements.

The amount of furniture is also governed by the size of the institution and the extent of the record keeping activities. The smaller hospital may be able to do with solid card cabinets for its indices instead of sectional files. The current histories may be accommodated in one vertical file instead of two as we have planned. But it must be kept in mind that as the institution grows the records grow and foresight should be used in the selection of filing equipment. It is unwise to install inelastic appliances only to find that the growth of the institutional activities will mean eventual discard, and replacement with modern



Sketch showing location of record room with reference to the surrounding rooms.

The record room in relation to other departments: 1—lobby; 2—office; 3—record room; 4—consulting room; 5—reception room; 6—superintendent's office.



devices capable of expansion according to needs.

We would draw a few simple and obvious conclusions regarding this problem of the record room:

Every hospital, no matter what the size, should include in its planning the record room as a separate entity. The larger institution naturally will do so because of the magnitude of its records. The smaller institutions should have it in mind because growth is inevitable and at some period in its development the institution will require accommodations for record keeping purposes.

The ideal location for the record room is in the administrative section within easy reach of the general offices and the consultation room, with an outlet into the corridor.

Equipment should be so arranged as to give accessibility to the important records which are referred to constantly.

Hard and fast rules are impracticable. The presentation of concrete ideas, may, however, stimulate interest in the subject.

#### GREATER NEW YORK HAS THIRTY-ONE TUBERCULOSIS CLINICS

The Association of Tuberculosis Clinics of Greater New York has issued its year book which shows a total of thirty-one tuberculosis clinics in Greater New York. The number of clinics was not reduced in the last year but the number of sessions in the department of health clinics was reduced from one every day with a night session on Saturday to a session every other day with a night session and a children's session on Saturday, making in all five a week. The Corlears Clinic, which formerly operated at 303 Broome Street, was moved, July 1, to headquarters of the department of health, 505 Pearl Street. Stuyvesant Clinic, which for three years was at 540 East Thirteenth Street, coupled up with the Yorkville Clinic. Another loss to the upper east side of Manhattan was the closing of the Day Camp operated at the department of health at the foot of East Ninety-first Street.

#### AMBULANCE SERVICE IN NEW YORK CITY

According to a report of the United Hospital Fund of New York, about 42,000 persons have been attended in the last year by ambulances from institutions supported by the fund. A total of more than 125,000 were answered from all New York hospitals that provide ambulance service. Forty general hospitals maintain 100 public ambulances engaged in city-wide service. The municipal hospitals of Manhattan and the Bronx maintain 38 per cent of the ambulance service and those of Brooklyn 22 per cent. The report states that eight minutes from the time any one in New York City is injured or stricken with illness requiring emergency attention an ambulance is on its way to provide relief.

#### THE VALUE OF A GOOD TELEPHONE NUMBER

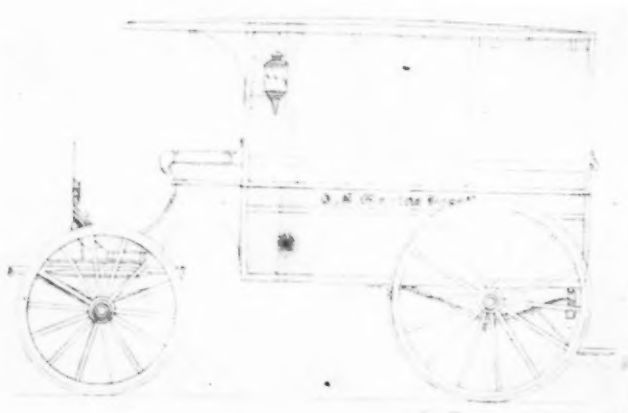
It is not uncommon for hotels and other large business houses to request one of a few selected telephone num-

bers. Often a concern will wait months to obtain a certain number, because it realizes the advertising and publicity value of a number easily remembered and that trips off the tongue. This is something to which the hospital can rightly give attention, for a good number is perhaps more of an asset to a hospital than to other concerns in proportion to the number of emergency calls.

In a study of telephone numbers in the *National Hotel Review*, Mr. John T. Bartlett, brings out the fact that there is but little competition for good numbers and that there are countless numbers which are easy to remember because of the grouping of figures.

#### TWENTY-FIVE YEARS OF PROGRESS IN HOSPITAL AMBULANCE CONSTRUCTION

Twenty-five years of development is strikingly shown in the two accompanying illustrations of U. S. Marine ambulances, furnished by Surgeon General Hugh S. Cumming of the Public Health Service. The rubber-tired, horse-drawn '99er was the last word in ambulance con-



The 1899 model of the U. S. Marine hospitals.

struction of that year. It will awaken in many a "gray-beard" recollections of his intern days.

The new 1925 type of ambulance, which was supplied to the U. S. Marine hospitals last year, was constructed by utilizing chassis and other materials taken over by



The 1925 model now being used by the U. S. Marine hospitals.

the Public Health Service from army surplus at the close of the war. A special body was built for the purpose, each ambulance costing, in addition to the surplus stock used, approximately \$860, fully equipped.

## PLANNING AND EQUIPPING THE PHYSIOTHERAPY DEPARTMENT OF A 100-BED HOSPITAL

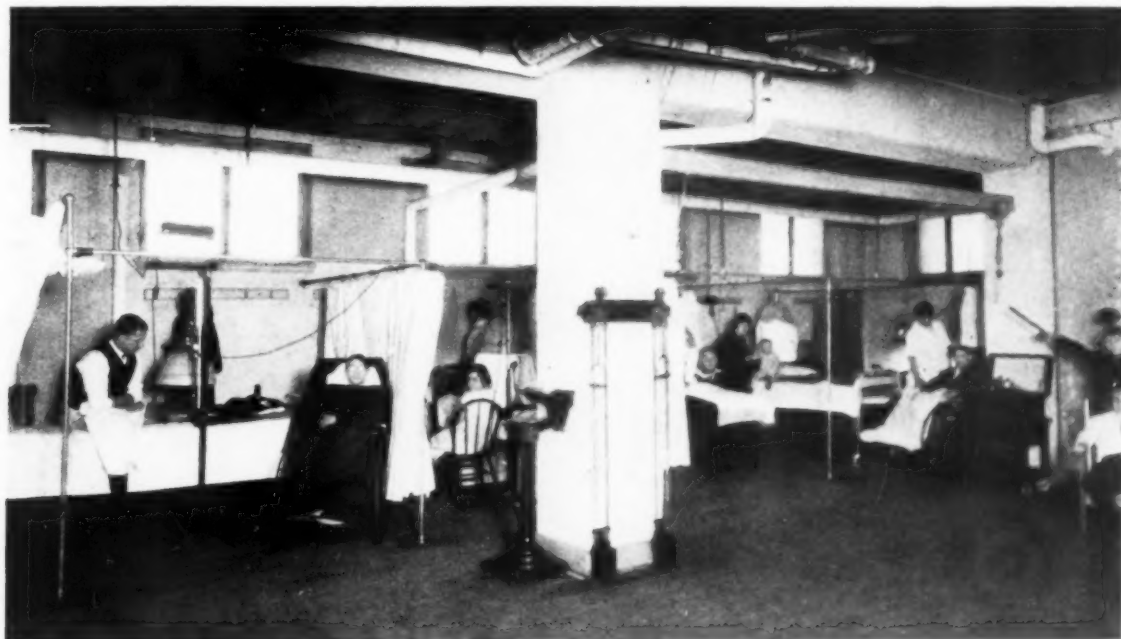
By F. H. EVERHARDT, M.D., PHYSICIAN-IN-CHARGE, PHYSIOTHERAPY DEPARTMENT, AND L. H. BURLINGHAM, M.D., SUPERINTENDENT, BARNES HOSPITAL, ST. LOUIS, MO.

AT THE present time the use of physical means as therapeutic agents has become well established. The medical profession has come to understand and appreciate the fact that the proper use of exercise, massage, water, electricity and light, can be made valuable adjuncts in addition to the present well-established methods of therapy.

Most new hospitals are now making provisions to equip their institutions with a more or less complete physiotherapeutic department. It seems to be the belief of those not acquainted with the facts that equipping such a department means a vast expenditure of money. However, upon analysis, this belief will be found to be untrue. The purpose of this paper will be to present some data relative to equipping the physiotherapy department of an institution with approximately one hundred beds. The fact, however, that a general hospital has that number of beds does not mean that all the patients would receive treatment in the physiotherapy department, but it is safe to say that one-half of them could be benefitted by one or more available methods, provided the

cheapness, and the variety of means whereby it can be applied. One of the most popular methods of applying water today is in the form of the so-called Scotch douche. This treatment consists in throwing a stream of water from a hose attachment, onto the patient at a distance of about fifteen feet, with a pressure of twenty to thirty pounds. An alternate change from hot to cold brings about a marked nervous and circulatory effect referred to as a tonic reaction, and is used wherever a toning up of general metabolism is desired. It is therefore especially indicated in convalescent and nervous patients. It is always a useful procedure following any heat treatment. For instance, it is a good treatment following an electric cabinet bath given for the purpose of elimination or stimulation.

In the hydrotherapy department there should be included a large tub with a capacity of at least fifty gallons. This tub can also be used for giving artificial Nauheim baths, considered very useful for the treatment of nervousness and heart conditions. The water in the Nauheim bath is impregnated with carbonic acid gas,



View of one side of treatment rooms showing deep therapy lamps and diathermy machine.

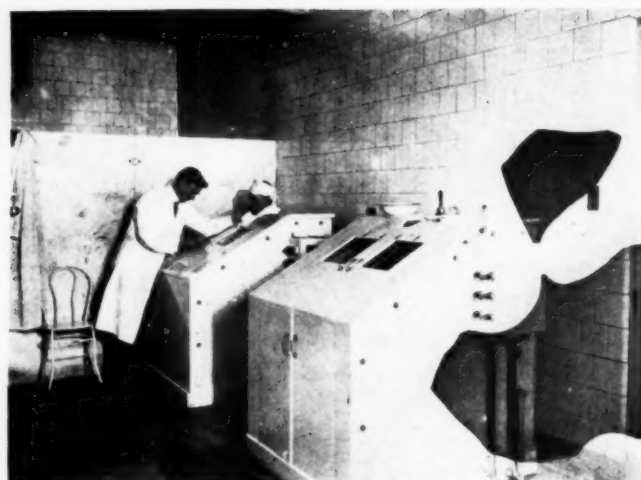
staff is in working harmony with the department.

Water is a valuable therapeutic agent because of its ready accessibility, its facility of dosage, its

which may be obtained in twenty-pound tanks in the larger cities, with certain quantities of sodium and calcium chloride. The proper proportion of these salts, CO<sub>2</sub> gas, temperature of water, and



Scotch douche (alternating hot and cold water with pressure) control table with shower and needle combination.



Electric cabinet bath.

duration of treatment, constitute what is called an artificial Nauheim bath. This same tub may also be used for the purpose of giving the hydro-electric bath, which is a procedure whereby water is charged with electricity by means of a sinusoidal current. There should also be added in this department at least two copper or wooden tubs suitable for giving the whirlpool bath for arms and legs. This, as the name signifies, means that the water is set in violent agitation, generally by means of air pressure obtained from a simple apparatus which may be connected with the hot and cold water supply, or a propeller contrivance. This arrangement allows repeated changes of temperature to be made which, with the added feature of mechanically stimulating the nerve endings by the force of the water's being set in violent motion, produces a very desirable flushing of the parts immersed. It is an excellent preliminary to massage and manipulations of painful stumps, scar tissue, injuries to nerves and, in general, for conditions with lowered circulation and nutrition. This same apparatus can, of course, be used also for simple contrast baths.

### Sitz Bath Now Obsolete

The sitz bath can very well be dispensed with, for there are now modern methods available for obtaining similar and better results than are possible with the now quite obsolete sitz bath.

A rather complete outlay for the hydrotherapy department, as outlined above, would consist approximately of the following items: one control table or wall apparatus with a Leonard mixing valve, together with a shower bath and needle spray combination; in the same room, or nearby, a hospital size electric lighted cabinet; one marble slab massage table with rubber air cushion for salt rubs; one large bathtub with continuous bath hammock, and one carbonic acid gas pressure

gauge with a CO<sub>2</sub> mattress.\* There should also be on hand a quantity of flannels for fomentation, the necessary bed linen, bath and face towels, rubber bathing caps and bath slippers. The number of separate treatment rooms would depend, to a large extent, on local conditions. With this outfit any of the modern, desired, and accepted hydrotherapeutic treatments may be given.

### Electricity as a Therapeutic Agent

Electricity has made wonderful progress in the field of physiotherapy, and today there are thousands of physicians who are making earnest efforts to learn more about it. It is true that for many years medical electricity has been in the hands of but a few able and dependable physicians, while masses of quacks used it to further their ends. Today, fortunately, the atmosphere of uncertain technique and meagre understanding has been considerably clarified, and a great deal of the former empiricism has been removed, so that at the present time electrotherapy is on a sound and rational basis.

Probably the most popular method of its use today is the high frequency current modality, known as diathermy. This alternate current oscillates at about one million times per second, which excessive frequency makes contraction of the muscular tissues impossible. The one and only thing which does happen is the production of heat. By use of proper electrodes and technique the heat can be intensified and localized as desired. This, therefore, makes diathermy a very valuable agent in the treatment of arthritis, paralysis and fractures. It is also used with a variety of success in reducing high blood pressure. There

\*Briefly this mattress consists of a metal corrugated contrivance supporting four rattan sticks about one-half inch by three feet, so arranged that the gas is forced into one end of each stick. These sticks are cut from a full diameter on one end to a beveled edge on the other, thereby allowing the gas to escape through the many fine openings in minute globules along its entire length. The mattress is connected with the gas tank by a rubber hose.





Treatment with Morse wave generator.



Air-cooled quartz lamp used for chest radiation in case shown.

are some who recommend its use in the treatment of pneumonia.

Other useful forms of electricity are the faradic, galvanic, and sinusoidal currents, all three of which may often be obtained in one machine. The static machine which was much in vogue in past years, has been almost entirely displaced, because of its limitations, its expense, and its tendency to be out of order. There are quite a number of types of electrical appliances on the market. Naturally, this has resulted in a definite reduction in price. In the desire to force production and sale, the manufacturer has come to realize that before he can sell his product he must first enlighten the medical profession as to its mechanism, technique, and application. In consequence, there has developed a sharp competition along the line of service and teaching. Lectures and instructions are frequently arranged in the larger cities, and courses, frequently extending for a week or more, are given for the benefit of physicians. These are participated in by a large number of the regular profession. One meeting held last fall reported an attendance of close to five hundred general practitioners. This seems a convincing argument in favor of electrotherapy, and indicates that many doctors are realizing the importance of, and are becoming better acquainted with, this form of treatment.

#### Equipment for Electrotherapy Work

Equipment necessary for this department would in the main consist of: one large and one portable high frequency machine, producing a high frequency alternating current with a 110 voltage. The current may be drawn from the general lighting system if it is alternating in character, but if it is direct it will be necessary to install a 2 k.w. rotary converter, which changes the alternating to a direct current. This converter would increase the cost by about \$100. For medical diathermy,

practically all the necessary electrodes may be cut and modeled to suit the circumstances and conditions required in any given case. One may also add to the equipment certain mesh electrodes as well as glass, vacuum, and non-vacuum electrodes. If a surgical diathermy is to be used, suitable electrodes applicable with this form must, of course, be added. For autocondensation, an additional pad will be necessary, which will act as one large electrode. This may be placed on any kind of a table or bed. The Morse wave machine is an electric apparatus in popular use. It is durable, compact, and small in size, and operates from either an alternating or direct lighting system. Because of its simple construction, one who is not necessarily an expert operator may, with little training, soon be able to give a variety of treatments with an alternating, a direct, and a sinusoidal current.

#### Growing Use of Irradiation

Another form of physiotherapy which is arresting the mind of the modern practitioner is irradiation. By this we mean the radiation from the sun, the arc lamp, the mercury vapor lamp, and the high powered ordinary light. Since Rollier reported his marvellous results in treating tuberculosis by means of sunlight and proper surroundings, a great deal of progress has been made in the study of effective irradiation of human tissue. The result of this has been the production of a quartz mercury lamp.

This appliance consists of a quartz tube containing mercury which, when ignited by an electric current, gives off the ultra-violet ray in large quantities. Quartz does not absorb the ultra-violet ray as glass will, and can be subjected to a tremendously high degree of temperature. There are two general types of this apparatus, the air-cooled, and the water-cooled. The former is used for general radiation, while the latter is used lo-

cally. For instance, it is used in certain types of skin diseases, erysipelas, in shrinking the tonsils, and many other indications. While the ultra-violet rays from the quartz lamp penetrate less than a millimeter of human tissue, being absorbed at that point by the blood stream, the ultra-violet rays produced by the arc lamp seem to have the power of a much greater penetration.

If funds permit, it would seem wise to have these types of ultra-violet lamps in the department. If funds are limited, however, the writer feels that he would omit the water-cooled lamp in preference to the air cooled. For local heating, either preparatory to further treatment or for the relief of pain, the old-fashioned hot air bakers are being discarded for the more modern 100- to 1,500-watt deep therapy lamp. To the writer they seem far superior. They are easily handled and adjusted, are clean and quite inexpensive. A good lamp may be obtained for \$75 to \$125.

#### Electrically Lighted Cabinet Indispensable

As already indicated, an electrically lighted cabinet is an indispensable apparatus in a physiotherapy department. It is generally placed in or near the shower bath room. This type of cabinet excels and is fast taking the place of the old-fashioned Russian, Turkish, or any kind of hot, dry air or steam bath. The patient breathes clean,

pure air, and is constantly under control. This cabinet may be used for elimination or stimulation purposes. It is better to use the tungsten lamps than the carbon, because of their greater power of illumination and penetration, and lessened production of heat, as before stated.

In recent months there has been developed another form of light treatment called the infra-red radiation. This, like the ultra-violet ray, is an invisible ray, with its chief purpose the production of deep seated heat. The ray is produced by a rather simple apparatus and the price itself is comparatively little. Further information regarding its structure and use may readily be obtained by writing to the manufacturers.

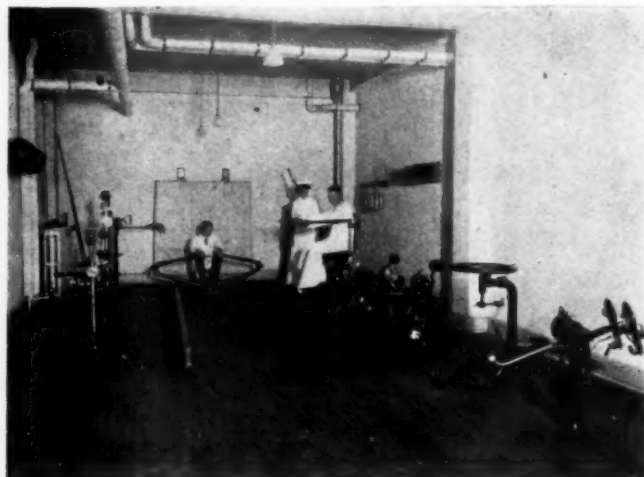
The last form of therapy in the classification of physiotherapeutics to which we shall refer comprises medical and corrective gymnastics, vibration, and massage. The interesting thing about this department is that the chief apparatus consists of the operator himself, as very few appliances are needed. A floor space twenty by thirty feet for a gymnasium and a space of perhaps twenty by forty feet which can be divided into treatment rooms for massage and treatments will be found ample. The chief operator should be a competent physiotherapist with a physical training background and three or four helpers, both male and female to assist him. But few pieces of apparatus are necessary in this med-



Diathermy, showing high frequency machines. The little girl is receiving treatment of the leg, and the little boy, of the arm.



Small type electric light baker.



Mechanical apparatus.

ical gymnasium. What seems to the writer to be sufficient will be found in this list: six section Swedish stall bars; a phlinth; two or three balance boards; a swinging trapeze which may be changed to swinging rings; two climbing ropes and poles and, if possible, an oblique ladder; a basketball with one basket; one four-pound and one six-pound medicine ball; six pairs each of one and a half and two-pound Indian clubs; twelve wooden and six steel wands; two six-foot square floor mats; two pairs of boxing gloves.

The above outline includes the essential appliances and pieces of apparatus necessary for a fairly well-equipped physiotherapeutic department. Some things might be omitted or others might be added, depending upon existing circumstances. With this outfit and a corps of competent operators, practically every worth-while treatment known in this realm of physiotherapy could be successfully given.

It may be of some service to the reader to have a table of items which, in our opinion, seem essential for an establishment as outlined here. The prices given are approximate, and are probably high rather than low.

#### Hydrotherapy Equipment

1 hydro outfit including control table, mixing valves, shower and needle spray piping, etc.	\$300 to \$800.00
1 heating outfit	100.00
1 enamel tub—50 gallon	40.00
1 CO <sub>2</sub> outfit, gauge and mattress	60.00
2 tubs for arms, and 2 tubs for legs, used for whirlpool or plain contrast baths	
wood	18.00
metal	28.00
(An ordinary wash-boiler can be used for the foot tub, and by cutting another one down about one-half and having the edge rolled, it can be used for the arm.)	
1 whirl-pool apparatus	25.00

#### Light Equipment

1 air-cooled quartz lamp D. C.	\$350.00
1 air-cooled quartz lamp A. C.	500.00
1 arc lamp	50.00
6 deep therapy lamps 1,000 to 1,500 watt; each	100.00

#### Electrical Equipment

1 portable diathermy A. C.	\$250.00
1 rotary converter, D. C. to A. C. (if it is necessary to convert current)	100.00
1 large diathermy A. C.	325.00
1 autocondensation pad	30.00
Miscellaneous accessories	50.00
1 Morse wave generator	375.00
Accessories for same	35.00

#### Gymnasium Equipment

6 Swedish stall bars	\$8.00 each	\$ 48.00
6 Swedish stall bar benches	4.00 each	24.00
1 plinth		40.00
2 balance boards		10.00
1 pair swinging rings		6.00
3 climbing ropes		15.00
3 climbing poles		10.00
1 adjustable ladder		50.00
1 basket ball		6.00
2 basket ball goals		6.00
1 4-lb. medicine ball		7.00
1 6-lb. medicine ball		8.00
6 pair 1½-lb. Indian clubs		6.00



Ultra-violet ray treatment of chest with arc lamp.

6 pair 2-lb. Indian clubs	6.00
12 wooden wands	1.00
6 steel wands	3.00
2 6-ft. sq. floor mats	60.00
2 pairs boxing gloves	15.00

#### Miscellaneous

Towels, blankets, beds, mirrors, tables, combs, benches, etc., to suit conditions.

The following articles, though not essential, may well be added to the gymnasium list if funds permit.

1 rope ladder	\$20.00
1 inclined rope	20.00
1 striking bag	8.00
1 striking bag drum	50.00
1 doz. bean bags	2.50
1 doz. skipping reeds	3.50
Mattress rack, wand, and Indian club racks	15.00

#### PRESBYTERIAN HOSPITAL ADDS "BACON PLAN" ROOMS

(Continued from page 204)

work in a year as 125 beds of the old type.

12. Speeds up construction: The utility rooms are made of sheet steel (lacquer finish) and shop fabricated. Results: Saves months of construction time because the utilities are fabricated at the same time the structural frame is under construction and only have to be set in place.

The development of the idea is founded on Mr. Asa S. Bacon's desire to improve and advance hospitals in their care of the sick, and as a result of his vision, imagination, and untiring efforts this forward step has been possible.

The manufacturer of the utility room has given much of his time and thought in the fabrication of this sheet steel unit which is a new idea and a pioneer product. Naturally, the right to use this equipment has been fully covered by patents, principally to protect hospitals against unscrupulous manufacturers who might exploit the idea.



## ESSENTIALS IN THE CONSTRUCTION OF A GOOD STATE HOSPITAL\*

BY CHARLES F. READ, M.D., STATE ALIENIST, DEPARTMENT OF PUBLIC WELFARE, CHICAGO, ILL.

THIS outline is offered by one who has had considerable direct experience in hospital management, and during the past two years has been able to stand to one side, and view the question from a more impersonal and general standpoint. It is not intended to present an elaborated scheme for a state hospital but merely to touch informally upon some of the high spots of this subject, to indicate, sketchily, some fundamentals of the physical make-up and the personnel organization of a hospital designed to offer the best service to the mentally sick, and for patients as well as employees.

A state hospital for mental disorders should be located near some fairly large center of educational and cultural opportunities. The time for hiding institutions away, near some small town, is past. Employees must have the advantages of urban contacts, medical societies, good schools, places of entertainment. There must be good transportation between the hospital and the city near which it is located by way of a cement road, and, of course, a street car line running to the hospital gate is desirable.

It goes without saying, perhaps, that a good state hospital will always be situated outside the realm of politics.

### Should Provide for Large Numbers

Fifty years ago it was said a state hospital should not have over 500 patients at the most. Today I would not build one for over 3,000—and in ten years time it would doubtless have a population of 4,000! But of course by that time it would be so crowded that it could no longer be a "good" hospital either for patients or employees.

The piggery, dairy and garden are profitable and employ many patients, but there is little to be gained in raising corn, small grains and hay. The responsibility of a large farm is apt to make a poor farmer out of what might otherwise be a good medical superintendent. Let there be 500 acres of land if possible, (1,000 is too much) and let there be *wood and water* upon the land. If not already there, let them be brought artificially for the patient's benefit as soon as possible, in his work, his walks and his hours of refreshment. The song of birds, the lazy flight of the clouds overhead, the wind in the trees, the quiet

flow of brooks and river, all have their part in the healing of the mentally ill.

The buildings for housing patients may be of one, two, or *possibly* three, stories, of brick, with hollow tile partitions and reinforced concrete floors. The infirmaries, habit-training wards and pavilions will be one story only. Two-story construction can be well utilized in the receiving wards, in housing the quieter re-educational and industrial groups and in wards.

There is grave danger of an improper development of the so-called cottage plan. It is cheaper, per capita, to build for a group of 100 patients than for one of fifty, and for 125 than for 100. Thus opportunities for proper classification steadily decrease while those for over-crowding increase *pari passu*. The term *cottage* is a misnomer when applied to caravansary housing 125-175 patients with but a single day-room.

### Kirkbride and Cottage Plans

In the old Kirkbride type of building, wards can be made of reasonable size at so little additional cost that there is small temptation to make them very large. Of course a small ward can be just as badly over-crowded as a large one, but this becomes obvious sooner and interferes less with the classification of patients. Perhaps wisdom lies in the discriminating use of both the Kirkbride and cottage plans. In any event, very few wards should house over fifty patients, and there should be many for less than this number, since proper classification is vital to the treatment of mental disorder.

That all buildings should be fireproof goes without saying nowadays. Even wooden buildings of one-story construction have, under unforeseen conditions, become terrible fire traps.

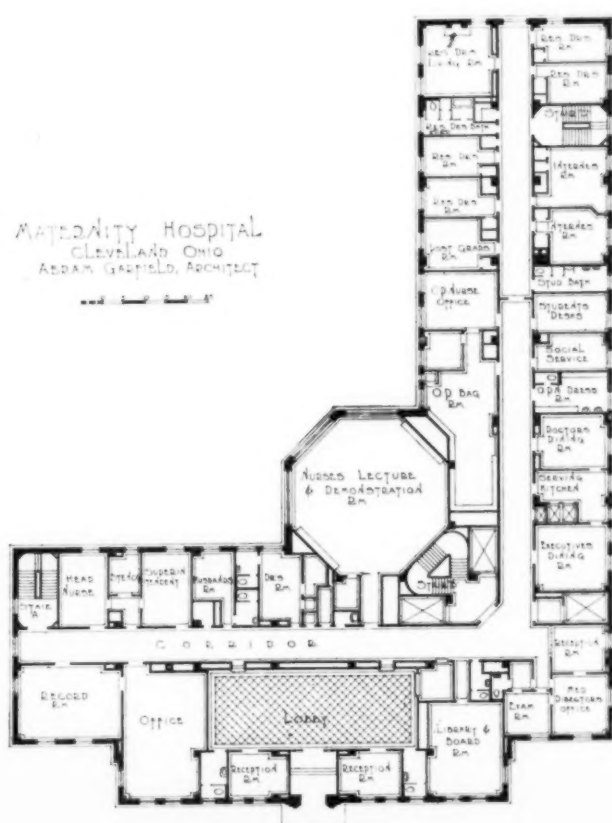
### Day-room and Dormitories

In the dormitories not less than fifty square feet of floor space should be allowed per patient, with the understanding that the ceilings are twelve feet or more high. Dormitories with arched ceiling construction and dormer windows make for good ventilation. In the day-rooms, also, fifty square feet per patient, should be a minimum. Let the walls be painted in different color tones in the various buildings so that the patient, when transferred from one place to another, may have the stimulus of a change. High-glaze white paint is an abomination fit only for a morgue. Tile-

\*This is the first of a series of articles on the construction organization and personnel of a good state hospital, prepared for THE MODERN HOSPITAL by Dr. Read.



The new Maternity Hospital, Cleveland, Ohio, designed by Abram Garfield, Cleveland. Floor plans are shown below. (Left) first floor plan; (right) typical floor plan.



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There is grave danger of an improper development of the so-called cottage plan. It is cheaper, per capita, to build for a group of 100 patients than for one of fifty, and for 125 than for 100. Thus opportunities for proper classification steadily decrease while those for over-crowding increase *pari passu*. The term *cottage* is a misnomer when applied to caravansary housing 125-175 patients with but a single day-room.

### Kirkbride and Cottage Plans

In the old Kirkbride type of building, wards can be made of reasonable size at so little additional cost that there is small temptation to make them very large. Of course a small ward can be just as badly over-crowded as a large one, but this becomes obvious sooner and interferes less with the classification of patients. Perhaps wisdom lies in the discriminating use of both the Kirkbride and cottage plans. In any event, very few wards should house over fifty patients, and there should be many for less than this number, since proper classification is vital to the treatment of mental disorder.

That all buildings should be fireproof goes without saying nowadays. Even wooden buildings of one-story construction have, under unforeseen conditions, become terrible fire traps.

### Day-room and Dormitories

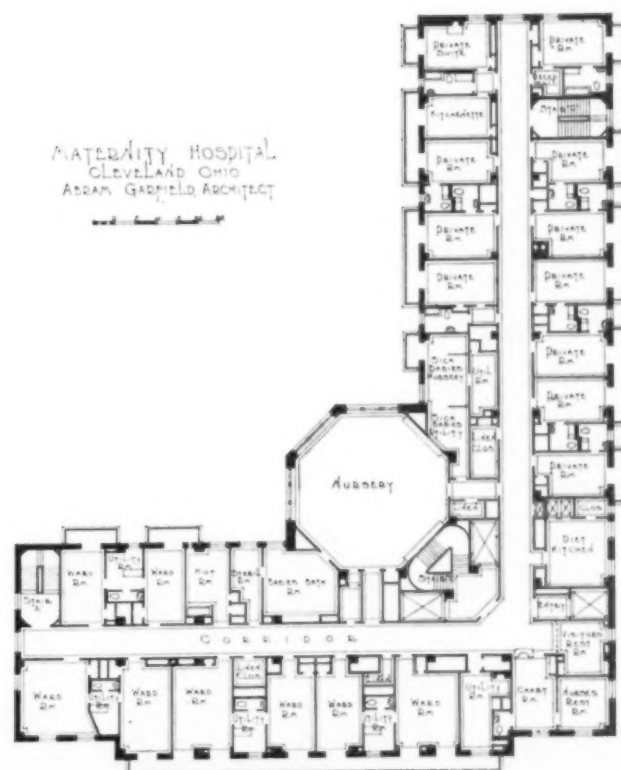
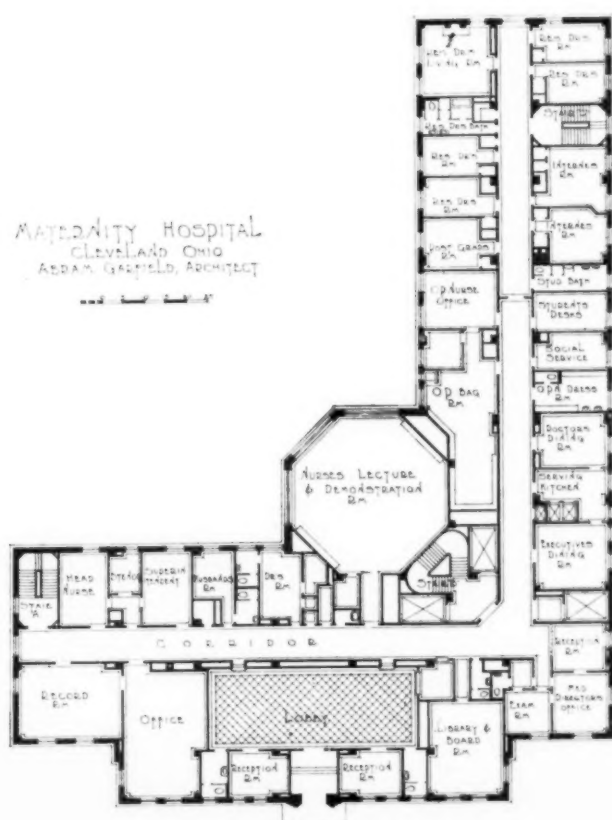
In the dormitories not less than fifty square feet of floor space should be allowed per patient, with the understanding that the ceilings are twelve feet or more high. Dormitories with arched ceiling construction and dormer windows make for good ventilation. In the day-rooms, also, fifty square feet per patient, should be a minimum. Let the walls be painted in different color tones in the various buildings so that the patient, when transferred from one place to another, may have the stimulus of a change. High-glaze white paint is an abomination fit only for a morgue. Tile-

\*This is the first of a series of articles on the construction organization and personnel of a good state hospital, prepared for THE MODERN HOSPITAL by Dr. Read.





The new Maternity Hospital, Cleveland, Ohio, designed by Abram Garfield, Cleveland. Floor plans are shown below. (Left) first floor plan; (right) typical floor plan.



lined walls in bathrooms and toilets—and possibly in dormitories—are efficient and economical, but in day-rooms they are cold and “institutional” and should not be used even upon wards for the most deteriorated patients.

Basements are desirable if they can be so arranged as to make impossible their conversion into dining rooms later on when overcrowding comes.

At least one positive statement can be made concerning ward floors. Composition floors should never be laid in bathrooms, toilets or dining rooms. They will not stand such application of water and brooms or scrub brushes as they receive from insane workers. Even in day-rooms and dormitories their economy is questionable; in these, wood is more homelike, tile more lasting.

The toilet that flushes with release of the cover is impractical and a nuisance. Automatic flush tanks must be set behind partitions where the patients cannot get to them, but where they are readily accessible to the plumbers.

#### Dining Rooms Connected with Wards

There is no question but that dining rooms should be directly connected with the wards, save possibly in the case of some industrial groups. The ward dining room is a homelike arrangement and, too, there is a close bond between the good attendant and the patients for whom he is personally responsible, a fact which the congregate dining room entirely fails to make use of for the patient's welfare. An allowance of at least fifteen square feet of floor space per patient permits the use of tables, one for every six patients. Long tables seating ten to fourteen have no place in a modern hospital.

There should be a receiving cottage for each sex, with two divisions, one for the acutely disturbed and the other for those who are more quiet. Between these two divisions will be the hydrotherapy department, so arranged that the section devoted to sprays, douches, cabinet treatments, and such, is readily accessible to the quiet wards, while the continuous tubs and the pack rooms are directly connected with the wards for disturbed patients.

In fact, these wards for acutely disturbed patients may very well be run in direct conjunction with the hydrotherapy sections and should contain some twenty-five beds in three or four adjoining rooms. No day-room is necessary here and diets will be served on trays.

Upon each of these receiving wards there should be rooms for staff meetings and lectures to visiting groups, for lumbar puncture work and treatments, mental examinations, and, last but not least, a room for occupational therapy.

As adjuncts to the receiving cottages there should be, close at hand, at least one cottage, or ward, for each sex, to which quiet patients in good physical condition may be transferred for further intensive study and observation prior to final classification and disposition.

#### Ample Porch Space for Infirmaries

The infirmaries must be commodious, of one story construction and with plenty of porch space screened in summer and glazed in winter. There will be a dining room for ambulant and tray service for the bed-ridden. There should also be x-ray rooms, dental offices, morgue and autopsy rooms, and a room of considerable size that can be used for clinics.

Little need be said concerning the wards for tuberculous patients for, at the present time, they are fairly well standardized in all hospitals. They should be well heated and the porches enclosed

in winter. The mentally ill tuberculous patient cannot protect himself properly from cold and hence cannot be subjected to such rigors as the sane patient.

Upon the farm there must be several small cottages holding from twenty to twenty-five men each. Convalescents, and even seemingly deteriorated praecox patients often do surprisingly well upon the farm under the proper sort of a foreman and house father and mother.

There should be at least four habit-training cottages; two for each sex; one for beginners and another to receive promotions from below and demotions from above. The cottages for the most deteriorated should be small, not to hold over



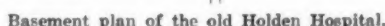
The Holden Hospital, Carbondale, Ill., one of the attractive small hospitals erected during 1924. It was designed by Alexander B. Boyer. The structure is of interest as an example of the combination of old and new building.

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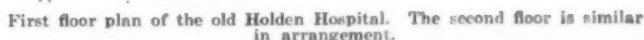
And in connection with this building there will also be a library for patients, of at least 1,500 books, together with a smaller one, possibly a branch of the city library of the neighboring town, for the use of employees.

An out-door amphitheatre with flood lights and a stage, surrounded by shrubby plantings, for pageants, out-of-door concerts and movies is very desirable. A recreation ground with swings, teters, slides, baseball field, tennis and volley ball courts is really a necessity in a good hospital. It is not enough merely to permit patients to sit and vegetate upon the lawn; they must be interested in doing something.

Staff physicians, if they are to remain contented, must have separate cottages, or at least duofold apartments.

An educational center, preferably a separate structure of moderate size, will be devoted to instructional purposes. Here the training schools for nurses, occupational therapists and attendants will have their headquarters. An amphitheatre for clinical lectures, with moving picture and stereopticon machines, a technical library and

(Continued on page 255)







# The MODERN HOSPITAL

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## WHERE IS THE SCIENCE OF MEDICINE IN HOSPITAL PLANNING?

ONE of our correspondents comments: "Practically all of THE MODERN HOSPITAL's original articles on planning and construction are written by architects. The photographs of buildings and reproduced floor plans are quite generally accompanied by the name of the architect."

"I realize that hospital building has become a specialized branch of architecture and it is well that it is so. But do not superintendents and doctors with hospital interests, training and experience contribute anything in the designing of new structures or of additions to old? Does all the credit of a new hospital building rightly belong to the architect? Is there nothing of the superintendent's or the doctor's or the medical staff's self in the picture and the outlines of floors?"

One part of his question may be pertinent but not so important as he makes it appear. The new home is credited to the architect, though the family may have planned it. The office building, the hotel, and the church are all creations to which an architect's name is attached but he probably had little to do with the original layout which was in the mind of the builder who knew the conditions he must meet. The new hospital does not escape an accepted rule or custom.

Our correspondent's question would be serious, if our doctors, our medical men, our hospital superintendents were not giving attention to the problems of hospital planning and construction or were leaving too much of this job to architects. Until recently, we believe that our hospital did represent too much of the art of architecture and too little of the science of medicine and hospitalization. At present the very opposite is probably true. The profession is dictating what is needed and the architect is incorporating it in material form.

The credit the architect is accustomed to receive in hospital building is due him, and we are willing he shall have it, but it is of the very highest importance that our hospitals shall embody the experience and observation of those who administer them and those who treat illness within their walls.

## SEPARATE PUBLICATIONS IN LIEU OF THE PONDEROUS ANNUAL REPORT

IN GLANCING over the many uninteresting annual reports that come to our desk we cannot but feel that their publication represents an unjustifiable waste of funds, in many instances,

trust funds. We are inclined to believe that, aside from the physicians connected with the hospital, few are interested in page after page of statistical data relating to the medical and surgical treatment of the patients who pass through the institution.

This data, of course, has its place, but would it not be far preferable to publish only a summary of it in the annual report and issue the detailed statistics in a separate document? This can be printed, if necessary, but may just as well be multigraphed, if possible, for distribution among the doctors of the community and others who may request these data. Funds thus released can be used to good advantage in publishing, at intervals throughout the year, less expensive pamphlets, illustrated, where possible, which give some of the intimate details of what takes place in the hospital.

We believe a scheme of this sort would win the hospital more friends than the traditional ponderous and forbidding annual report.

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#### PART-TIME PAID EXECUTIVES FOR STATE ASSOCIATIONS

**H**OSPITAL superintendents who are interested in developing the scope and extending the influence of their local state hospital associations are generally willing to devote more than a reasonable amount of time to the affairs of these associations, either as officers or as members of committees. At best, however, the time they can give to this work is relatively limited, often not enough in fact to enable the association to function to the full extent of its possibilities. The situation could hardly be otherwise, for their primary responsibility is to the institution which they serve as administrator. To it belongs the major part of their time, thought and energy.

It would seem, therefore, that if state associations are to realize their full possibilities they ought to have a paid executive on at least part time, who could make the interests of the association one of his major responsibilities. The Ohio Hospital Association, the oldest and one of the most active of the state hospital associations, has worked out an arrangement of this sort by employing on part time the services of the executive secretary of the Ohio Public Health Association. The Michigan Hospital Association contemplates making a somewhat similar arrangement with the newly appointed secretary of the Michigan State Medical Society. This tendency will be watched with no little interest by those who feel that the state associations have an important part to play in the hospital economy of this country and who in consequence would like to see them thrive.

#### EXPENSE ALLOWANCES FOR INTERNS AND STUDENT NURSES

**W**HILE it is true that hospitals of the higher grades have no difficulty in getting the interns and pupil nurses they need, there is a very pronounced feeling, if one may judge by the opinions expressed at recent state hospital association meetings, that both nurses and interns, but more particularly interns, should be given a reasonable stipend or allowance to cover their incidental expenses, even though the institutions with which they are connected are giving them a high type of education and practical experience.

Those who advocate this policy point out that in perhaps the majority of cases those who aspire to enter the professions of nursing and medicine come from families of moderate means and that the young medical students who have already had to carry themselves through at least six, and often eight, years of collegiate and technical education, find themselves unable to finance their intern year free from debt. Indeed, in many instances, they have to borrow funds to meet the incidental expenses of this year. Interns count themselves fortunate if they are connected with hospitals that have established revolving loan funds from which they can borrow to meet their needs.

It would seem that some form of financial assistance should be given interns and nurses who lack necessary means. Whether this assistance should take the form of a separate allowance or should be worked out on a scholarship basis as has been done by several institutions is a moot question.

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#### OUR FIFTH GUIDE FOR HOSPITAL PLANNERS AND EXECUTIVES

**T**HE fifth edition of *The MODERN HOSPITAL YEAR BOOK* is just off press. In general plan this volume is similar to previous annual editions which have been uniformly welcomed by hospital superintendents and their department heads, hospital architects, and building and equipment committees. The text and reference matter, however, have been revised and greatly enlarged.

The first eighty-four pages of the volume are devoted to general editorial material; the remainder, to seven special sections and condensed catalogues. In addition to a directory of hospital, medical and health organizations and other national agencies serving the hospital field, the general editorial section contains a survey of hospital service in the United States, and articles



on hospital law and legislation, the preliminary organization of a hospital, the constitution and by-laws of a hospital, accounting and budget control, suggestions for efficient hospital purchasing, fire prevention, and other important phases of hospital service.

The special sections are devoted to the following general topics: construction materials and equipment; general furnishings, equipment and supplies; clinical and scientific equipment and supplies; laundry equipment and supplies; food service equipment, utensils and supplies; foods and beverages and professional service. Each of these sections contains an alphabetical list of commodities and sources of supply as well as invaluable editorial information to those who are confronted with the planning, equipping and operating of a hospital. Some of the subjects dealt with are: coordination of hospital planning; suggestions regarding the general furnishings; clinical equipment; mechanical equipment of the laundry, and the organization, equipment and operation of the dietary department. In this section are given not only the initial equipment requirements but also annual replacement quantities based on the experience of many hospitals.

A feature of the volume which makes it especially helpful as a reference book is its alphabetical finding index, which enables one to refer readily to the product or commodity for information on sources of supply.

Superintendents of hospitals and department heads alike will find the volume a helpful working handbook which, if consistently used, will conserve time and save money.

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### PROVISION FOR CONVALESCENT WARDS

**A** GENERAL hospital in a city in central Illinois is developing a department for convalescents because it realized the needs and the demands for such facilities. Its wards for the acutely sick are located in the midst of the city. Those for the tuberculous, crippled children, and convalescent are in an institution, complete and modern in itself, located in the country. These convalescent wards were not built on a theory or in an expectation that, in time, they would be used; the hospital had to have them now to accommodate its patients.

Since nearly all of the four hundred beds in the central hospital are always filled and applicants are constantly turned away, the annex was constructed to receive convalescent cases by transfer, and furnish them the advantages of the peace, fresh air and sunshine of the open country.

### DR. WALSH CHOSEN EXECUTIVE SECRETARY OF A. H. A.

Just as we go to press announcement has come of the appointment of Dr. William H. Walsh, New York, N. Y., as the new executive secretary of the American Hospital Association, succeeding the late Dr. A. R. Warner whose death occurred on November 27, 1924. This appointment was made at the meeting of the board of trustees of the association, February 23, 1925. Dr. Walsh assumes his new duties, March 1. Since Dr. Warner's death, Mr. John E. Ransom, superintendent, Michael Reese Dispensary, Chicago, Ill., has been acting secretary.

This is the second time that Dr. Walsh has held the position of executive secretary, as he served in this capacity during 1917-18, as the first full-time executive secretary of the association. He is a graduate of Girard College, Philadelphia, Pa., and of the Medico Chirurgical College of the same city. During the reform administration in Philadelphia he was appointed superintendent of the Philadelphia Hospital for Contagious Diseases, and later became director of the Children's Hospital, Philadelphia, which he reorganized.

Dr. Walsh relinquished the office of executive secretary when ordered to France during the World War. Upon his return he entered the U. S. Public Health Service where he served on the staff of Surgeon General Blue as secretary of the hospital board and later as commanding officer of the Hospital for Tuberculosis at Markleton, Pa. When the industrial welfare project for the Laurentide Power & Pulp Co., Grande Mere, Quebec, was contemplated under the auspices of the Life Extension Institute of New York, Dr. Walsh was selected as director. Upon the completion of this work he was appointed associate medical director of the Standard Oil Co., of New Jersey, and medical director of the Tropical Oil Co., of Colombia, S. A., where he was engaged in the supervision of an extensive sanitary project, industrial welfare and hospitalization. Later he was engaged as consultant for the Standard Fruit & Steamship Co., of New Orleans for the purpose of inaugurating an industrial welfare and hospital program in Spanish Honduras, and since the completion of this work he has been engaged in private hospital consultation and industrial welfare work.



## NEW MOUNT SINAI HOSPITAL, HARTFORD, CONN.; A REMODELED PRIVATE RESIDENCE

By SAMUEL G. ASCHER, SUPERINTENDENT, MOUNT SINAI HOSPITAL, HARTFORD, CONN.

**I**N THE Spring of 1922 a number of Hartford citizens decided to have a hospital of their own, and, accordingly, a campaign was started to raise \$100,000 as a nucleus of a fund for such an institution. Realizing that a new building of fireproof construction with a capacity of seventy-five beds, would be almost beyond expectation, the next step was to look for some private residence, large enough to be reconstructed into a building that could be utilized as a hospital.

After considerable search, they were successful in purchasing the residence of former Governor Brainerd, a



The private residence which has been converted into the new Mount Sinai Hospital, Hartford, Conn.

beautiful brown stone structure of three stories, sixty-two by ninety feet, on a plot of ground 175 by 170 feet. Messrs. Berenson and Moses were commissioned as architects to reconstruct this building into a general hospital with a capacity of seventy-five beds.

### Private Residence Remodeled

This old building was in reality a rare structure, with its solid mahogany doors and mantels, long mirrors, massive outside doors of solid mahogany, with great bronze lions' head knockers, large enough for a fortress. Because of their artistic beauty, the architects left these to the present building. When the reconstruction began, it was necessary to tear out a great deal of the woodwork which was sold to furniture manufacturers. The floors being parquet, were, for the most part, left intact, but later all the floors were covered with battleship linoleum.

New bathrooms and utility rooms were built with modern plumbing and tiling. Each floor has its solarium. Fire-escapes were built both on the east and west sides of the building and, in fact, every precaution was taken to make the building as nearly fireproof as is possible with an old stone structure. An automatic elevator was also installed.

### Thoroughly Equipped General Hospital

The hospital is thoroughly equipped with the essentials for a general hospital, including a completely equipped

roentgen ray department and a laboratory, both for clinical and pathological procedures.

The entire first floor of the building is set aside for general ward patients, the second floor has only private wards and individual rooms, while the third floor has the operating rooms, delivery room, nursery, and laboratory. There is an extension on the third floor which is utilized as the interns' quarters.

### All General Cases Admitted

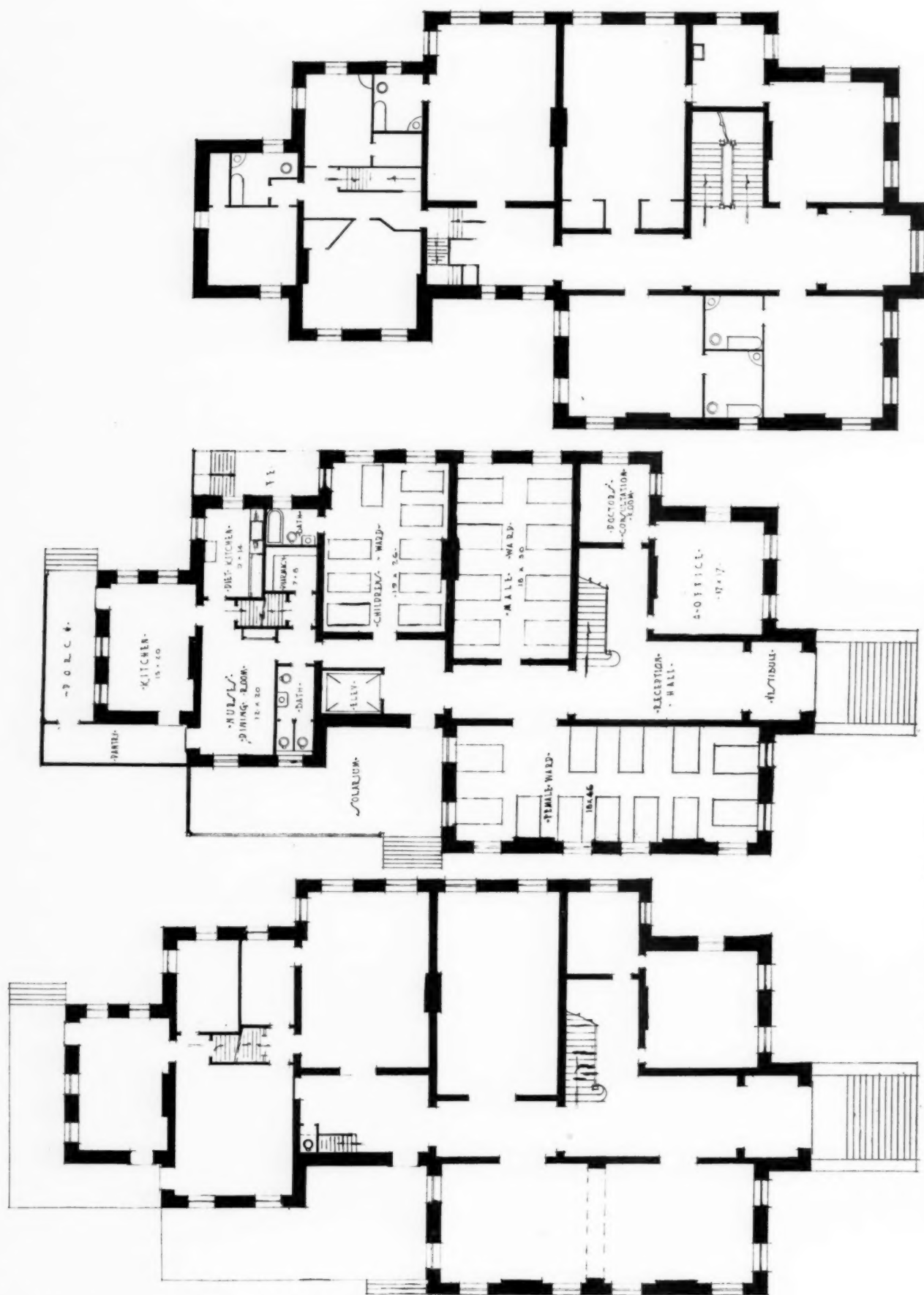
The hospital takes care of all types of cases, except contagious cases and alcoholics and from present indications, the time is very near when definite plans will have to be considered for expansion. The spacious lawns surrounding the present hospital will thus be sacrificed to make way for the construction of a new large modern building of at least 200 beds.

### Nurses' Home Opposite Hospital

Directly opposite the hospital is a residence which has been taken over as a nurses' home. This building has been entirely redecorated and furnished and new plumbing has been installed. The first class of pupil nurses began



Basement plan, remodeled building.

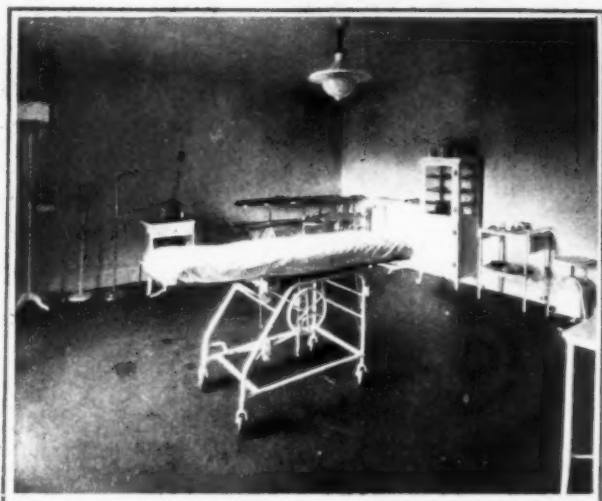


Floor plans (left to right) first floor, old building; second floor, remodeled building; second floor, remodeled building see page 252.

September 1, 1924. This class included twelve young women, each of whom has had at least one year of high school. It is intended to make the school an accredited one

that will progress along with the hospital, which has met the requirements of the minimum standard of the American College of Surgeons.

INTERIOR VIEWS, NEW MT. SINAI HOSPITAL, HARTFORD, CONN.

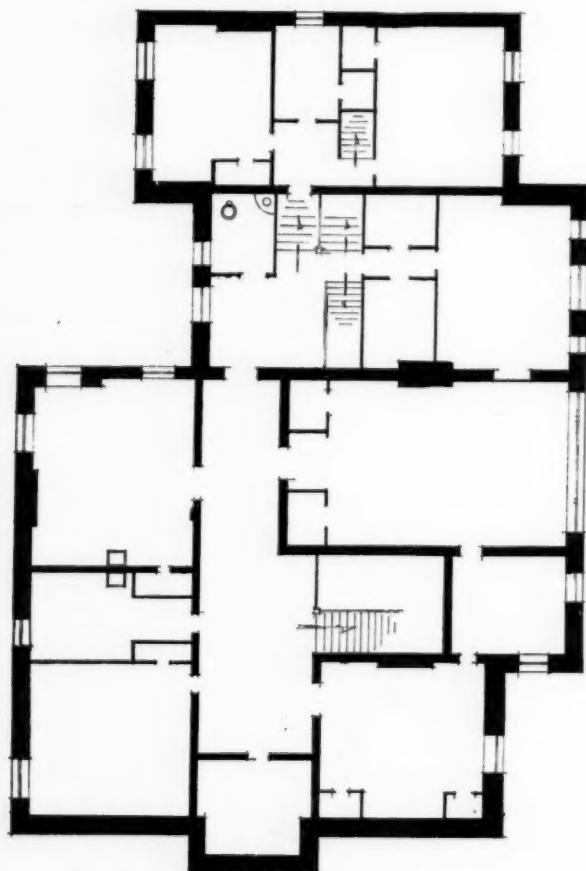


(Upper left) main operating room; (upper right) another view of the main operating room; (center left) the delivery room; (center right) a section of the nursery; (lower left) a general ward; (lower right) a view of the main kitchen.

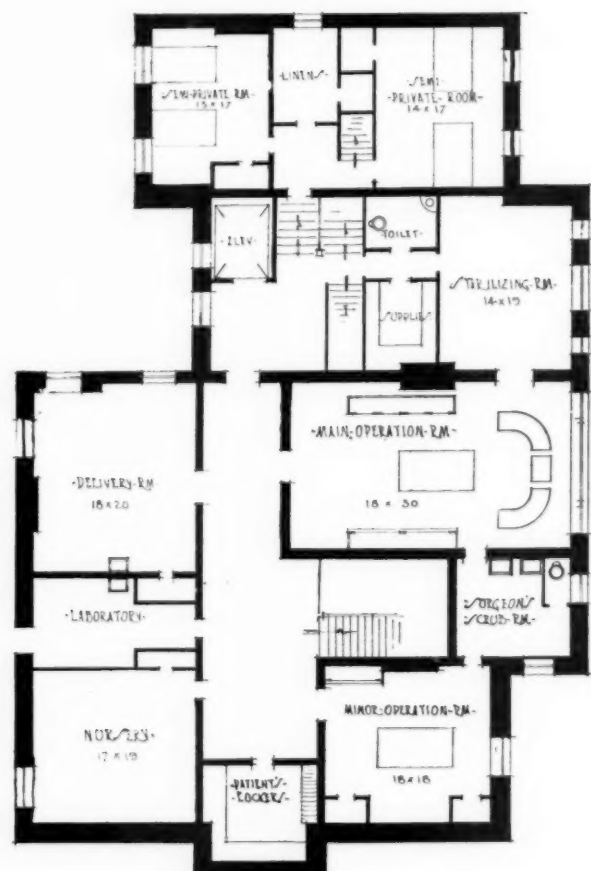




Second floor, remodeled building.



Third floor, old building.



Third floor, remodeled building.

## HOTEL DIEU OLDEST CANADIAN HOSPITAL

The Hotel Dieu de Precieux Sang has the distinction of being the oldest hospital in Canada and the second oldest existent hospital in North America. It was founded in 1638 through the benevolent efforts of Richelieu's niece, the Duchess d'Aiguillon, and was opened in 1639. It was completely destroyed by fire in 1775 and rebuilt in 1757. Since that time it has had a number of developments, the last one being in 1907. The present building accommodates 250 patients.

## PER CAPITA COSTS AT HAMOT HOSPITAL

The cost of food at the Hamot Hospital, Erie, Pa., in 1923 was fifty-two cents a day, according to the annual report recently issued. The average number of patients treated daily was 134 and the daily average of the entire family, 270. Based on the unit daily cost per patient, the food cost was \$1.33. The total cost of caring for a patient a day was \$4.22 or forty cents less than the average for the previous year.

## PROGRESS IN SIMPLIFYING GENERAL FURNISHINGS AND SUPPLIES\*

By R. M. HUDSON, CHIEF, DIVISION OF SIMPLIFIED PRACTICE, DEPARTMENT OF COMMERCE, WASHINGTON, D. C.

THE report of your committee on general furnishings and supplies is especially significant, in that it demonstrates a method by which some of the financial problems of hospital administration can be solved successfully. Let me illustrate:

There are over seven thousand hospitals in the United States and Canada. There are nearly two thousand allied institutions, such as orphanages, homes for the aged, for the blind, and so on. These nine thousand institutions have fairly similar problems in organization, construction, equipment, operation, and maintenance. It has been estimated by your own association that over \$350,000,000 is spent annually for new construction and equipment, and that more than \$525,000,000 is spent each year for hospital maintenance. A total closely approaching a billion dollars!

Raising a billion dollars a year in your field is extremely difficult, much more so than in other more commercial fields. You do not have the same opportunity to raise prices as does the manufacturer or the merchant. You cannot always ask a credit rating on your patient, as the merchant does of his new customer, neither can you transact your business on a "C. O. D." basis. Consequently you have a more intricate problem in financing. Expenditures must be, and are, carefully controlled, and rigidly supervised, all avoidable wastes are carefully watched, and constant effort is made to hold them down to the irreducible minimum. But with all due regard for your efficiency in these matters, there is yet a large area of possible saving which you may cultivate with advantage and profit. I refer to the field of simplification which Miss Margaret Rogers and her committee has just begun to survey.

Secretary Hoover said recently, in his address before the American Engineering Council, "The whole basis of national progress, of an increased standard of living, of better human relations, indeed of the advancement of civilization, is the continuous improvement of productivity."

Improvement is only possible, as we eliminate waste in manufacturing, selling, and purchasing. One of the greatest wastes in America lies in too great a degree of individualism in many of our basic products, or articles of every-day use. In other words, the simplification and standardization of many of these items make for greater economy in their production, their distribution, their use, and their upkeep. The necessities of maximum production during the war opened a great vista of possibilities in this direction. Today, dozens of different sizes, types, models, styles and patterns of the most commonplace things are offered the buying public, without due regard for whether or not the buyer really needs or wants the tremendous diversity offered him.

### The Consumer's Viewpoint

If we were to take all advertising at its "face value," we might conclude that the one great cry of the consumer is for "something different." So far we have been able to determine, the consumer often has not been consulted,

but when he does get the chance to speak, he speaks in no uncertain terms. In fact, his chief demand is for the lowest possible price consistent with the quality he is seeking, otherwise he does not buy, except under the pressure of dire necessity or extreme urgency. Therefore, to the extent that you insist on buying standard goods, or insist that superfluous or unnecessary sizes and varieties in your every-day purchases be eliminated, you are making your voice heard in a most effective way. There is no manufacturer, or group of manufacturers, who will not listen to the wishes of a group whose purchasing power runs over a billion dollars a year.

Now for a few examples of this modern cooperative method of getting better value for your money.

Simplified practice means the reduction of variety in sizes, dimensions, and immaterial differences in every-day commodities as a means of eliminating waste, decreasing costs, and increasing profits or values.

It is being proven in a steadily increasing number of cases that simplified practice decreases stocks, production costs, and selling expenses, and increases turnover, promptness of delivery, quality of product, all of which means greater profits to manufacturer, merchant and consumer, through volume sales of better goods at lower prices.

One simplification with which you are all familiar is the adoption of one standard base for all electric lamp globes. Think of the convenience this means.

Another is shown in the more recent simplification of all sockets and plugs.

Those great arteries of commerce, our railroads, are steadily applying simplification in their purchases. If 223 shades of paint will serve their purposes instead of 287, they cut out the superfluous and unnecessary sixty-four varieties.

Why? Mainly because it costs too much to stock or store a huge variety or assortment of supplies. They find that 25 per cent of the value of their supplies is absorbed in the costs of handling, storing, etc.

Our retail drug stores are applying simplification for similar reasons.

As a result, one group we know of, has cut its warehouses from nine to two, etc.

One of our leading industrial engineers points out that "variety creates expense, whereas quantity creates income."

Many of our industries have applied simplification, and we are proud to say we have helped them in their efforts.

The simplification of building materials will help to hold down construction costs. The saving due to the elimination of 60 per cent of the odd and unnecessary sizes, in which lumber is offered for sale, is estimated to be around \$250,000,000 annually.

Reports on the results in this and other fields are published in the "Elimination of Waste" series of the Department of Commerce.

Simplified practice is just as important to the buyer as to the seller, sometimes more so. There is no economy in buying a wide variety of the same thing if, by study, you can make one thing serve a variety of uses.

A large chain hotel company simplified its requirements, and released \$350,000 from former inventories as well

\*Discussion of the report of the A. H. A. committee on general furnishings and supplies, read before an administration section of the Buffalo Conference, October 8, 1924.

as effected a saving of \$100,000 a year. It standardized on ten styles of glassware, three designs of carpets, one pattern of table linen and so on through nearly 200 other supply items.

### How China Was "Simplified"

The American Hotel Association, the United States Potter's Association, and several other groups cooperated in simplifying hotel china. (In this slide and also in the next two there is a total of thirty-two pieces.) These thirty-two pieces represent the basic or standard shapes, each is made in a few sizes, giving 160 varieties instead of the seven hundred or more prevailing before simplification occurred. Possibly you can adopt these same standards with advantage.

The Federal Specifications Board which drew up specifications for material purchased for government use has committees at work on rubber products, sterilizing equipment, refrigerators, disinfectants, gauze and bandages, office furniture and supplies, thermometers, tableware and kitchen utensils, insecticides, hair for mattresses and pillows, also on medical and surgical instruments, appliances and supplies.

Coordination of your committees' activities with these government committees may result in common standards for both. Such mutually acceptable standards would be a great economy to all concerned.

The whole effort these days is toward a lower "cost of living," which simply means giving a greater purchasing power to the dollar. A dollar now buys only as much as sixty-two cents did before the war.

### Ten Billion Wasted Because of "Variety"

The annual waste in industry due to lack of simplification and standardization is estimated at TEN BILLION DOLLARS. This is 50 per cent of the net income of our people as shown by the income tax reports for 1922. Obviously any part of this wasted \$10,000,000,000 we can save, increases our net income, and helps increase our purchasing power.

So I heartily concur in the recommendations of your committee to the effect that it be permitted to continue its studies in the field of possible simplification and standardization of hospital furnishings, equipment and supplies.

Unquestionably your committee can make further progress, and bring the benefits inherent in its work to you all at a much earlier date, if you employ an expert to assist the committee. The cost for his services shrinks to nothing when you consider that groups with much smaller purchasing power than yours are saving upwards of \$250,000-\$500,000 and some a million dollars a year, through simplifying and standardizing their requirements. It is not at all impossible to save one per cent through this avenue of economy, and one per cent of your annual expenditures is \$10,000,000.

If the estimates of current average construction costs of \$3,500 per bed are fair, then one per cent saved through simplification is equivalent to the cost of twenty-eight 100 bed hospitals.

Looking at this possible saving from the angle of maintenance, if the estimates of average maintenance costs of \$4 per bed per day are fair, then \$10,000,000 is sufficient to maintain the 750,000 beds in the hospitals of the United States and Canada for nearly four days.

The success of simplification depends largely on cooperation of manufacturer, distributor, and purchaser or consumer. Our division of the Department of Commerce

provides a clearing house through which such groups can get together, discuss their problems, and develop a common course of action toward the elimination of those wastes arising out of too many varieties of the same thing.

### Scope of Simplification

Miss Rogers has told you of some of the results obtained thus far which apply to commodities directly in your field of furnishings and supplies. If time permitted, I might tell you of some of the hundred and fifty other fields in which we are working, but suffice it to say, that the simplification of bricks, lumber, metal lath, building tile, structural and roofing slate, and many other construction materials will help to lower the cost of that new annex or new building you are contemplating. The simplification of sheet steel and sheet metal ware will help to lower utensil costs. The Dental Supply Association and the American Surgical Trade Association are actively interested in simplification in their respective fields, and very recently a cooperating committee has been developed comprised of representatives of the drug manufacturers, the wholesalers and the retailers. Your association will undoubtedly be interested in these efforts; and there is no question but that you can be of help to them.

### Individuality Not to Be Stamped Out

In closing, there is one point I wish to bring out. We have no desire to stamp the individuality out of invention or design. We are not trying to block progress, nor are we trying to stifle initiative. Our only purpose is to assist the industrial and commercial world, and through them, the ultimate consumer, to get rid of the senseless, wasteful, and uneconomic diversity in articles of common usage; and to concentrate production, sale and use on those sizes, types and styles in greatest demand, of greatest usefulness, and greatest practicality.

### Non-Standard Machine Most Costly

The doctor, or surgeon, or hospital superintendent, or nurse who advances a new design or idea, or an improvement on an old one, should be encouraged and rewarded, but when it comes to purchasing specialties in furnishings, supplies, or equipment, and you have a choice of a freak style or model at a price, and a "standard," then take the long range view. Nine times out of ten, the standard will prove a better buy, all points being considered. In factory practice, there is no machine so costly as the non-standard, which can be used for only a few purposes, and therefore stands idle most of the time, and for which you can never get spare parts when you need them most without the greatest difficulty.

So again, I say, give more power to your committee, give its members the benefit of your suggestions, pay attention to its recommendations, and cooperate with it fully at all times. Your reward will come in due time in better prices, better quality, quicker delivery, and better service in all the things you buy to help make your hospital the pride of your community.

### RADIUM INSTITUTE OFFERS FREE SERVICE

The Radium Institute, London, England, has recently extended its services to patients in "straitened circumstances" by the inauguration of a department for the reception of in-patients of this class. This section supplements the existing section for pay-patients, and forms a self-contained unit, comprising a ward with four cubicles for women and one with three cubicles for men, an operating theater, service kitchen, and pantry.



## NEW CLINIC OF UNION MEMORIAL FOUNDATION GRAND RAPIDS, MICH.

By MILBURN KUSTERER, GRAND RAPIDS, MICH.

**T**O meet the needs of average persons for a complete diagnostic service at a cost within the means of all, trustees of the Union Memorial Foundation of Grand Rapids, Mich., have erected a modern clinic building which opened formally in November, 1924, but has been in use, however, since October 1.

Dr. William J. Mayo of Rochester, Minn., and Dr. Franklin H. Martin of Chicago, were speakers at the formal opening.

The building is owned by the Union Memorial Foundation officers who are: President, Willard F. Keeney; vice-president, T. William Hefferan; secretary, Noyes L. Avery; treasurer, Burton A. Howe. The trustees are these officers and Judge Leonard D. Verdier, Clay H. Hollister and William A. Jack.

The trustees have issued the following statement in regard to the operation and policy of the new clinic: "This new building is the beginning of an important health movement and the success of the enterprise, no doubt, will mean much to the people of this city and community.

"Some two years ago several of the medical men of Grand Rapids together with a number of citizens interested in health matters, considered the great need of the average person for complete diagnostic service at a fee he or she could afford to pay. To meet this need there was formed, more than a year ago, the Union Memorial Foundation, a non-profit making organization composed of a number of citizens interested in the possibilities of the plan as outlined by the physicians and surgeons. These organizers, catching the vision of the physicians, provided funds and interested others, who also contributed. The result is the beautiful building now erected and soon to be put into practical use in the service of Grand Rapids and western Michigan.

"The clinic is an entirely independent organization of eleven medical men who have banded together to do an old job in a modern way. They are Dr. Alexander M. Campbell, Dr. Fred P. Currier, Dr. Thomas D. Gordon, Dr. John T. Hodgen, Dr. John H. McRae, Dr. William Northrup, Dr. Ferris N. Smith, Dr. Richard R. Smith, Dr. Henry J. Vandenberg, Dr. Merrill Wells and Dr. Joseph B. Whinery.

"The clinic is an entirely independent organization, not allied or controlled by the neighboring hospital (Blodgett Memorial Hospital) although the clinic will make considerable use of the hospital's laboratory and x-ray departments for which service the clinic will pay the hospital proper compensation.

"The work of the clinic will be to examine thoroughly and to diagnose and advise patients or patients' physi-

cians or both. The advice and assistance of any number of the clinic physicians will add nothing to the single moderate fee to be charged the patient. In this way, the person examined will receive the benefit of combined medical opinion, including that of surgeons or specialists in other fields of medicine; also adequate laboratory and x-ray findings, according to the needs of the case.

"So far as examination and diagnosis go, the clinic physicians, surgeons and specialists will function as a single unit, but in addition they will continue to practice in the community as individuals, as in the past, each having his private office in the clinic building and each one, as usual, in personal contact with his patients."

"Following a diagnosis the patient is in the care of a physician of his own selection (either a member of the clinic or other physician) with whom the clinic cooperates, giving its best advice and service. The clinic is for diagnostic work only."

The building was designed by Mr. Ellerbe, St. Paul, Minn., architect for the Mayo Clinic, Rochester, Minn. It harmonizes architecturally with Blodgett Memorial Hospital with



The new clinic building of the Union Memorial Foundation, Grand Rapids, Mich.

which it is connected by tunnels and pneumatic service tubes.

An adequate medical library in the clinic building will be at the disposal of physicians of the community.

### ESSENTIALS IN THE CONSTRUCTION OF A GOOD STATE HOSPITAL

(Continued from page 245)

reading room, demonstration rooms, shop rooms and laboratories for teaching purposes will all find a place here.

A state hospital for mental patients cannot adequately serve them without the facilities outlined above by way of essential structures properly planned.

Patients who are crowded together in large groups and improperly classified in poorly planned buildings cannot improve and recover as they should.

Granted, however, that by some miracle of cooperation between legislature, architect and medical superintendent, such an institution might be built, still it would not be a good hospital without a commensurate and properly organized personnel—a subject to be treated in a subsequent article.

## RECENT HOSPITAL DECISIONS

BY DOROTHY KETCHAM, ANN ARBOR, MICH.

### Right of Township to Erect Hospital Upheld

The General Assembly of South Carolina March 26, 1923, authorized the board of county commissioners of Marion County to issue and sell bonds for the purpose of establishing and maintaining a hospital. Certain persons were to be appointed to carry out the provisions of the law, and provision was made for a bond issue. At the subsequent election a majority of people were not in favor of establishing the hospital, following which an injunction was requested to restrain the issue of bonds. This injunction was refused and the constitutionality of the law attacked.

The supreme court of South Carolina, April 15, 1924, upheld the law, saying that the legislature has power to authorize the township to discharge proper governmental functions. The corporate purposes of a town are to promote prosperity, safety, convenience, health, etc. In the opinion of the court, a hospital is an institution, a utility which directly "subserve a public use within the meaning of the governmental power to tax for a public purpose. What the state may do directly in furtherance of such objects, the subordinate governmental agency or municipal corporation, clothed with a delegated power from the state, may also lawfully perform . . . The general assembly in delegating to Reaves township the power to erect and maintain a public hospital . . . conferred a power which was for a corporate purpose . . . " within the meaning of the constitution.

The court further states that since the title of the hospital building is in Reaves township, as a body politic and corporate for public use, and since its control and management devolves upon the public officers who are the officials of the township it may be said to be a public building within the meaning of public ownership, public control and public use. A dissenting opinion states that "the act under which these bonds are to issue should contain some provision that will insure a public use, and this act has no such provision. It is true that the hospital may be under the management of public officers, but this act does not give to the public any rights in the hospital. A man who can afford to pay the price may find it very convenient to have a hospital near him, but if the hospital will take only pay-patients, the hospital will be of no service to those who cannot afford to pay even a reasonable price for the services desired. It may be that the management will make some provision for the treatment of those who cannot pay. A public institution should give the public a right to its use, and not a mere privilege by its kind-hearted officials." *Battle et al v. Willcox*, 122 S. E. 516.

**Property Endowment Defined by Court** The following case which was decided by the supreme court of Mississippi, October 6, 1924, is of interest to hospitals in its definition of the term endowment. It seems that the exemption from taxation granted

the college covers two classes of property: "First, the lands or grounds, not to exceed 100 acres, used by the corporation as a site and campus for said college, and the buildings, halls, and dormitories thereon erected; and second, the endowment fund contributed to said college." The question for the court to decide was "Does the exemption include land held by the college as a part of its endowment?"

According to the court's decision the exemption granted from taxation was restricted to "the lands or grounds,

not to exceed 100 acres, used by the corporation as a site and campus for said college, and the buildings, halls, and dormitories thereon erected." *Millsaps College v. City of Jackson*, 101 So. 574.

**Fraternal 'Benevolent' Property Sub-let Not Tax-exempt** The Supreme Court of Mississippi September 9, 1924, held that a Masonic lodge building which was rented in part for stores and offices, the income from which was used to pay the balance of purchase money due on the property, was not exempt from taxation, because the rentals were not used for "fraternal and benevolent purposes." *Senter v. City of Tupelo*, 101 So. 372.

### Private Charity Property Taxed

The Kentucky Court of Appeals, June 24, 1924, held that the Brotherhood of Elks was not an institution of "purely public charity" within the constitutional exemption from taxation saying, "It is the use to which the property is put and not the ownership thereof which determines whether it is exempt from taxation . . ." The association was classed with other groups engaged partly in work of public charity, "but mostly devoted to benevolence on behalf of its own membership which means that it is in part a private charity." *Benevolent Association of Elks v. Wintership*, 263 S. W. 670.

The nonchalance of boys who are sure of a dinner, and would disdain as much as a lord to do or say aught to conciliate one, is the healthy attitude of human nature. —Emerson.

## The Reading Hospital

Bulletin READING, PENN'A No. 3

*The Hospital Departments which are centered around the patient*



*It requires the service of 184 people to carry on the work of our Hospital*

Reprinted from the Reading Hospital Bulletin.

# LOCATING AND ORGANIZING THE NURSE'S STATION

By RICHARD RESLER, ARCHITECT, NEW YORK, N. Y.

**A**LTHOUGH the function of the nurse in a general hospital is the same the world over, an extensive investigation of this subject and inspection of a vast number of public and private hospitals has disclosed such a diversity of opinion regarding the location and general arrangement of the nurse's station (although, comparatively, in each type of hospital the problem was similar) that the writer is prompted to submit this analytical paper for whatever value it may have to those contemplating the erection of new hospitals or the alteration of old ones.

## Provision for Nurse's Station Overlooked

As a matter of fact, provision for the nurse has been frequently neglected in the original plans of the building, particularly so in private hospitals, resulting in a location without daylight or ventilation, and without regard to temperature or day and night duty. Further complications have been caused by the impractical arrangement of the service rooms and their relation to the nurse's station.

As all patients' services rotate about the nurse's station, centralization is of paramount importance. This, however, does not conclude the requirements, as correlation of the stairs, elevators, linen supply, utility room, quiet room and diet kitchen must be provided for. Furthermore, in view of the nurse's long hours on duty and the depressing atmosphere inherent in all hospitals, daylight and ventilation at the station should be considered.

An analysis of the duties of the floor nurse whether in a public hospital or a private hospital indicates the following:

1. Control all avenues of approach and communication.
2. Supervise patients.
3. Meet members of the staff.
4. Meet all visitors.

To the casual observer these duties may appear relatively simple, but after study and observation in hospitals, one realizes that the details involved are many and varied. Keeping in mind that an impractical location with inadequate facilities properly and effectively to care for the patient, must in turn react on the patient, it is evident that too much stress cannot be placed on the necessity of a thorough study of this subject.

Inasmuch as the location of the nurse in a public hospital composed mainly of wards is a distinct problem from that in a private hospital where individual rooms prevail, reference in detail thereon will be made separately as follows:

## Provision in Private Hospitals

Recently in private hospitals provision for the floor nurse has been made in an alcove opposite or near the approach, by which is meant the stair and elevator section. In order to furnish adequate working space this

alcove should not be less than one hundred twenty square feet. Diagram "A" indicates such an arrangement.

There seems to be a divergence of opinion as to whether the linen supply and blankets should be arranged for in the alcove with cabinets and drawers along the wall or whether in a separate ventilated room. Under any condition it should be convenient to the nurse and under her observation. One advantage of the separate room arrangement lies in the ease of access, with only one door to lock, whereas with the cabinets many doors must be controlled. Again, ventilated linen is superior to that in cabinets.

## Surgical Dressings and Trays in Cabinets

On the other hand, should the cabinet arrangement be used, provision can be made within a section of the cabinet for surgical dressings and treatment trays. This is a convenient arrangement, as it eliminates entering the linen storage proper. Furthermore, with clear glass on the cabinet doors, any type of linen can be readily found, particularly by new nurses who might have gone on duty, and who might not be familiar with the arrangement of supplies. With the cabinet, the drawers must be large to receive blankets, and a sliding shelf provided for folding purposes. Space limitations largely govern whether a separate linen room

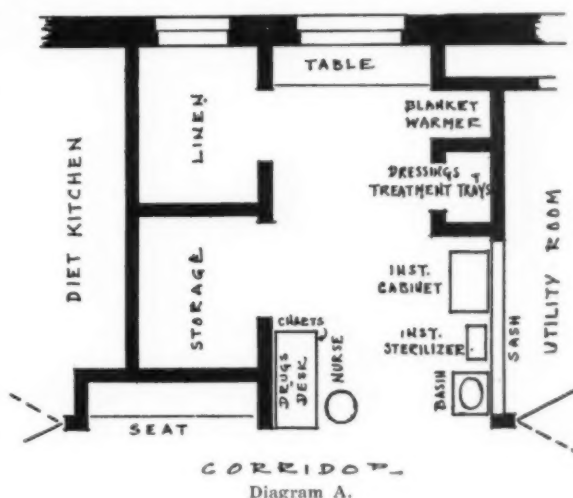


Diagram A.

or cabinets will be used.

Obviously the nurse's desk and chart rack must be arranged in conjunction with the control of whatever type of signal system is in service.

The drug supplies can be kept in a cabinet directly over and a part of the nurse's desk, or in a combination built-in drug cabinet and sink. With the former, the lavatory or sink must be used for drugs.

In this alcove a lavatory or sink with either elbow or knee action supply control valve with a built-in, flush-mirrored front, towel cabinet should be arranged for. This is a great convenience for the nurse, staff and visitors.

Many new plans indicate provision for the blanket warmer and instrument sterilizer in the utility room. The writer questions whether this is proper from purely a practical standpoint. The line of travel of a blanket is from the nurse's station to the patient. Therefore, should the blanket warmer (which is a cabinet workable in any location, regardless of light and air) be located at a point convenient to the nurse's station, it would save many unnecessary steps.

The same condition likewise holds true for the instrument sterilizer. The instrument cabinet is either separate or combined with the drug cabinet, but under any condition generally is located at the nurse's station. It therefore seems superior to maintain the instruments allied with the instrument cabinet separate and distinct from the utility room, without contamination with bedpans and the like.



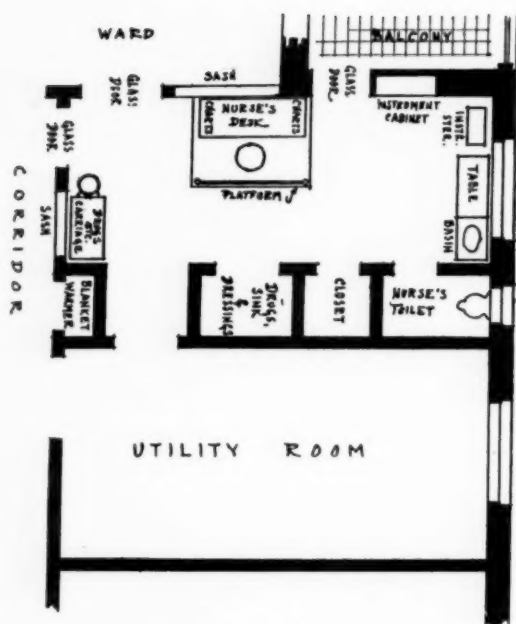


Diagram B.

The nurse's signal system must be conveniently arranged so that the call can be readily observed by the nurse on duty, either at the station or on the floor, and it is highly desirable to simplify the signal system by eliminating unnecessary stations. If clear glass windows set about six feet above the floor are installed between the nurse's station and the utility room and the annunciator so arranged that it can be seen from both the diet kitchen and nurse's stations, simultaneously it will be a great convenience. Furthermore, any complicated mechanism in the signal system is to be avoided in a hospital, since frequent repairs are necessary to keep such mechanism in proper working order. Provision for the doctors' call system must also be considered.

#### Relaxation Room for Nurse

A relaxation room has recently appeared in conjunction with the nurse's station, where special nurses can retire during their or the patient's sleep hour.

There has also recently appeared a combined nurse's station and information desk, the purpose of the latter being to relieve the nurse from becoming involved in what might be termed clerical work. The advantage of such an arrangement is easily comprehended after an inspection of a hospital during visiting hours, when visitors request information as to the location of certain rooms and are leaving fruit, flowers, etc., for patients, all of which creates confusion for the nurse, unless she is relieved of such duties.

#### Recess for Visitors Near Station

In further connection with confusion at the nurse's station during visiting hours, it might be desirable to provide a recess in the alcove proper or immediately adjacent thereto, equipped with a settee for visitors to remain while waiting to see the patient. A limited number of visitors only, are permitted to see the patient at one time and, furthermore, it often happens that it is not convenient for the visitors to be admitted immediately upon arrival. Consequently, space provided for them off the main corridor and out of the line of travel would facilitate matters greatly. Should space permit, a separate room would be preferable.

Either the charting rack must be combined with the

nurse's desk or space provided for it adjacent thereto.

It frequently occurs that the layout does not permit of the exits to the fire-escape being located at the ends of the building, so that the nurse's alcove can serve this purpose. Under these conditions the door to the fire-escape must be glazed and, if possible, vented. With this door open during the summer months, an abundance of light and air is admitted.

A toilet for the use of the nurse should be located a short distance from, if not within, the alcove proper.

A built-in closet or a locker is necessary for the storage of nurses' cloaks, etc., while they are on duty. This is especially desirable should the nurses' home be some distance from the hospital, and no coat room provided for on the entrance floor.

Should the service be large, space within the alcove must be provided for the storage of a stretcher and drug carrier. A large storage room for such apparatus is preferable.

A public telephone with coin box attached for the use of visitors and patients is advisable. The coin box will eliminate maintaining phone records in the main office denoting the number of calls any patient might have.

#### Nurse's Station in Public Hospitals

Regarding the nurse's station in the wards of a public hospital opinion varies whether the location should be in the ward proper or whether in a separate room adjacent to the ward with glass partitions for surveillance purposes.

Although within the ward might appeal practical for day duty for the reason that the nurse is always within call, it does not appear practical for night. Naturally the service in the ward at night is at a minimum, nevertheless any desk duty must be disturbing to the patients. Furthermore, the temperature in the ward at night is generally permitted to drop below sixty-eight degrees F., and subject to drafts which is uncomfortable for the nurse even though she be dressed accordingly. In addition, it is not proper to allow patients to overhear any conversation between the nurse and attending physician regarding their condition. Such conversation is not always encouraging to the patient.

#### Station Separated by Low Glass Partition

Therefore, in recent years, a compromise has been reached, in placing the nurse's station in a room adjacent to the ward, separated by a low glass partition about seven feet high. Such an arrangement has merit, in that the nurse with the low partitions between her and the patients, can, at night, hear the patients breathing, which is the nurse's guide as to the patient's condition. Nevertheless, any improvement as to the temperature criticism, and phone conversation is practically unchanged.

A method whereby this condition might be alleviated would be to extend the partition up to the ceiling resulting in virtually a separate room, but permitting communication, when necessary, particularly at night, by the use of sliding sash in the partitions between the nurse's desk and the ward. See Diagram "B". Such an arrangement would give flexibility, as in winter it could be opened as required and in summer opened entirely, if desired by the nurse.

In order to facilitate surveillance, the floor of the nurse's room, or a portion thereof, should be elevated about twelve or eighteen inches above the floor of the ward. Study must be given the location of the equipment within the room, particularly the drug cabinet and sink, so that the supplies coming from the main drug storage

and pharmacy can be readily transferred from the carrier to the cabinet or vice versa without lifting the drug carrier over the step caused by the raising of the nurse's room floor.

If it is at all possible to arrange the nurse's room so that while surveying the ward, she can survey the ward balcony as well, it will be a great convenience.

It is questionable whether the ward linen supply should be kept in the nurse's room or adjacent thereto with an access door off the main corridor. From the writer's investigations and experience with the linen supply located within the nurse's room, it is disclosed that considerable confusion develops, particularly during the morning when linen is being collected and distributed and the attending physicians are present. It therefore appears preferable, under these conditions, to locate the linen room separate from the nurse's room.

#### Instrument Sterilizer in Nurse's Station

The instrument sterilizer which is customarily located in the utility room, might well be placed in the nurse's station, where it would be convenient to the instrument cabinet. A lavatory or sink with elbow action or knee control water supply should be provided for with a built-in, mirrored-door towel cabinet, over. This can be used by the nurse and attending physicians.

In view of the light traffic within the room, the floor of the nurse's station could safely be a resilient warm type, such as linoleum.

A toilet for the use of the nurse might conveniently be located with direct access off the nurse's station.

In a public hospital the nurse's home is usually some distance from the hospital, and unless provision is made for a nurse's coat room on the entrance floor, it will be necessary to provide for such storage in the nurse's station.

As to the ease of access to the service rooms, such as utility room, diet kitchen, etc., and location of the necessary equipment in the nurse's room, building conditions vary greatly and each problem must, therefore, be studied and made to conform to the individual conditions encountered by the size and shape of the hospital, such as topography, orientation, approach, exits, of the site at hand.

#### STUDY OF HOSPITAL FACILITIES OF NEW YORK PUBLISHED

The United Hospital Fund made public recently the results of a detailed statistical study of the hospital facilities of greater New York. This study not only shows the

magnitude and variety of the hospital service available for the civilian population and costing about \$35,000,000 a year to maintain, but also how much of this service is performed by municipal hospitals, by proprietary hospitals and by the fifty-seven non-municipal hospitals which are members of the fund.

According to this tabulation the 182 hospitals of all kinds in New York (excluding United States Government institutions) gave last year 8,685,375 days of treatment to 473,166 patients. They also cared for 915,114 dispensary cases which in the course of treatment aggregated 3,141,555 individual visits to the hospital dispensaries. In all the hospitals last year there were 32,410 beds available for patients. This was about 10 per cent of all the hospital beds in the United States. On the average 75 per cent of these beds were in use.

The study also shows that the fifty-seven hospitals belonging to the United States Hospital Fund, with 11,691 beds and 209,903 patients, provided more than one-third of the total number of beds available, and cared for more than two-fifths of all the city's hospital patients. The service of the United Hospitals in these two respects constituted 3,202,393 days of treatment which was more than one-third of the service performed by all hospitals. Almost half of this service was free to the sick poor of the city.

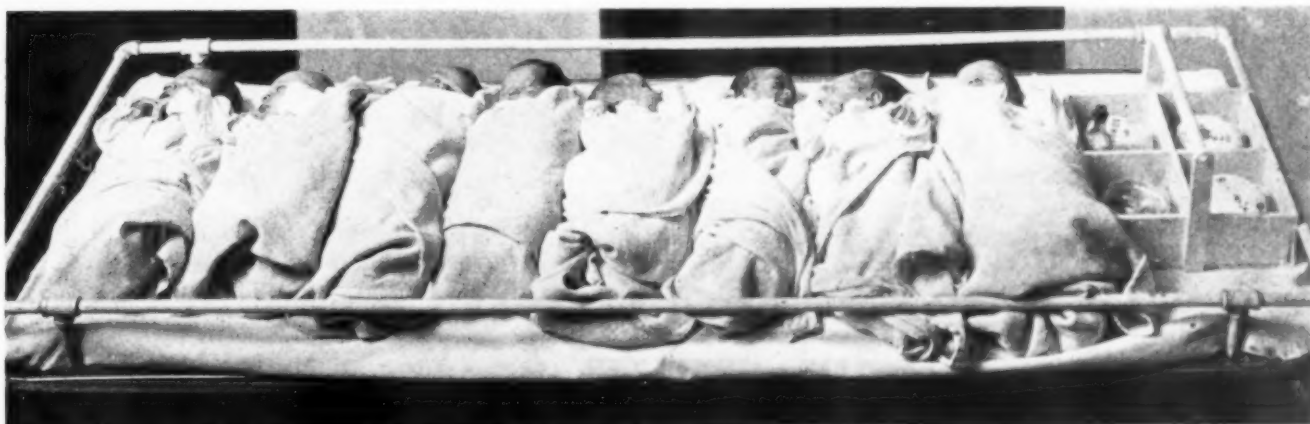
Of the dispensary service last year well over 50 per cent of the cases were treated at United Hospital dispensaries conducted by the municipal and other hospitals.

The municipal hospitals, numbering 18, provided 12,357 beds, treated 126,667 patients, and gave 3,124,556 days of treatment. Non-municipal hospitals other than these in the fund, provided 7,035 beds in 57 institutions, treated 112,404 patients, and gave 1,990,170 days of treatment. Fifty proprietary hospitals provided 1,344 beds, treated 24,192 patients, and gave 365,256 days of treatment.

On the average patients treated in the hospitals stayed 18 days, but the number of day's stay varied between 15, the average for the United Hospitals, and 25, the average for the municipal hospitals.

Grasslands Hospital, Valhalla, N. Y., has published a pamphlet, entitled "Professional Standing Orders" which contains the rules of the hospital for the reception, care and treatment of patients. Hospitals generally will find this pamphlet of interest and copies may be purchased from Grasslands Hospital.

It has been said that the brain is like a good piano badly played upon.—*Selected.*



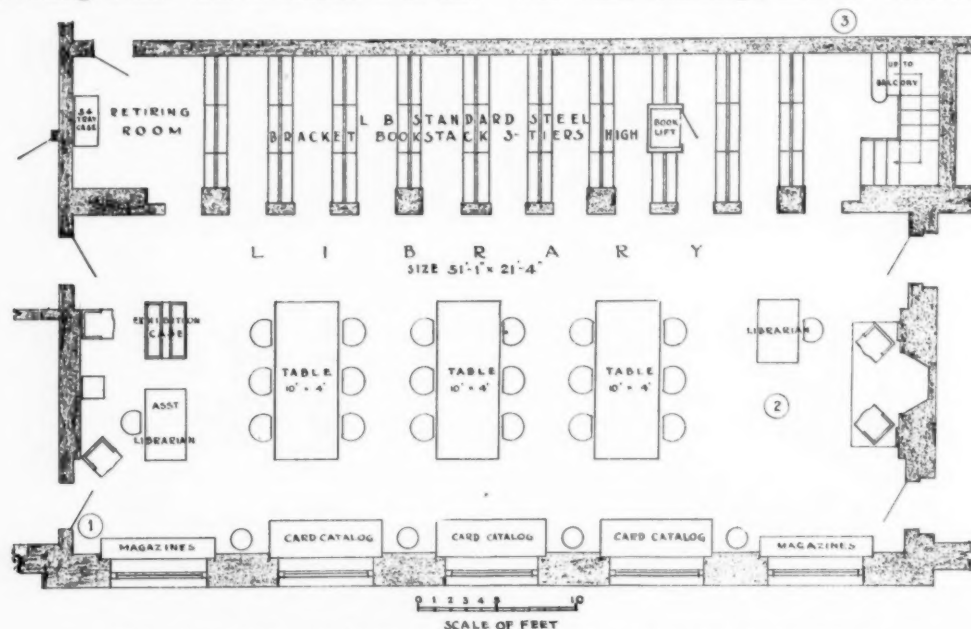
A group of Who's Who of the future enjoying their chaise lounge at the Decatur and Macon County Hospital, Decatur, Ill.

## THE MEDICAL LIBRARY IN THE HOSPITAL: THE KEY TO A THOUSAND PROBLEMS

By GRACE W. MYERS, LIBRARIAN, TREADWELL LIBRARY, MASSACHUSETTS GENERAL HOSPITAL, BOSTON, MASS.

**W**ITHIN the hub of the wheel of organization which keeps a great hospital running, there is a certain small spring which, if touched into action, produces a force which gradually spreads and spreads until it reaches the outermost rim of the wheel, and so wakes to life an influence previously undreamed of. But it happens that many institutions live for years without noticing this little spring; or, if it is noticed, it does not receive the awakening touch. But if contact is at last

chusetts General Hospital, which has been universally admired for its beauty and its simplicity. It is located on the second floor of the Moseley Memorial building, which is the main entrance to the hospital, and which is chiefly occupied by the administration. The main reading room is fifty-one feet long, thirty feet wide (including the nine-foot steel bookstack ranges) and twenty-five feet high. The walls of the room are painted a soft, warm grey with white trimmings, and the woodwork is mahogany.



Floor plan of the Treadwell Library, Massachusetts General Hospital, Boston, Mass.

made and the influence begins to be felt, possibilities are many and important. This spring opens the door of the medical library.

Consider with me for a moment the personnel of a large modern hospital. It has its board of trustees, its administrative board, its medical board with all subdivisions (including a house staff and an out-patient staff, now happily intermingled more than they were ten years ago), its laboratories of various kinds, its social service department, its x-ray department, its training school for nurses, its interns, its dietary, its record room. A large family under one roof. The problems confronting this group of men and women as they work together for the public good are many and varied, and a quick solution of some of them often saves a life.

### Library Should Be Near Center of Activities

The medical library is the source of information and should be located as nearly as possible in the center of the institutional activities, or near the entrance; at least, in a place available to members of the medical staff without going out of their way. The style of the room must, of course, conform to the general architecture of the building in which it is located. The illustrations accompanying this article show the Treadwell Library of the Massa-

Five ten-foot windows facing the west supply plenty of daylight, and electric light is furnished from two overhead chandeliers, while two single bulbs light individual stacks. The balcony tier is attractive to the eye, and in this particular library is used to shelve early volumes of periodical sets whose later publications are on the main floor. There is still a third tier reserved for books which appeared prior to 1900, for duplicates, and for old and valuable matter which constitutes the "treasure house" of the library, and which is not open for general use and is closed off by an iron grill at the head of the stairs.

### Clinical Records Kept Near Library

There are two smaller adjoining rooms for the use of those wishing more privacy for special study. The three large tables in the main room are of solid birch, this wood being more durable and less liable to be injured than mahogany of which the other furniture—desks, chairs, catalogue files, etc.—is made. The clinical records of the hospital are housed in close proximity to the library, these two departments being practically under one head. This allows the use of the large reading room by students of records as well as by students of literature.

If a hospital includes several buildings, it is perfectly feasible and reasonable to have a few small branch libraries directly under control of the central station. I have recently read an article advising the handling of hospital

\*The cordial thanks of the author are expressed to the Library Bureau for courtesy in supplying the illustrations used in this article.

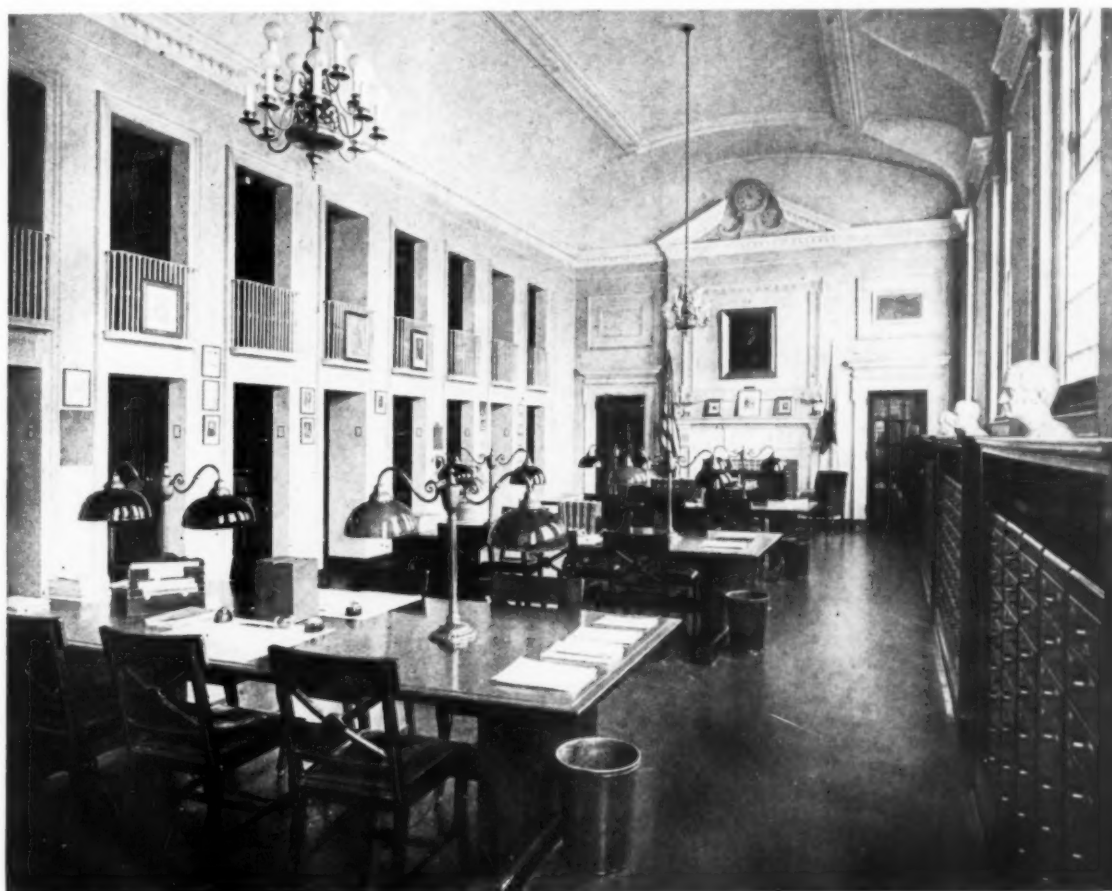


medical libraries by the local public library. This may be successful in a small place, but I do not believe that in a large city hospital the best results can be obtained through any outside management. The situation demands the entire time of a trained librarian who herself is a member of the hospital family, who should study its history, its traditions, its constantly changing personnel, its wants, its possibilities.

#### Budget too Small for Adequate Library

Unfortunately, the library budget is far too small to provide all the current literature wanted; then the librarian becomes a bold-faced, cheerful beggar. The money at hand must be spent for the best periodicals, a few medical classics, medical biographies (always including those of some famous nurses), the necessary textbooks and books of reference. Anything else must be purchased by assessing certain interested people, or by begging from the publishers. And in these days of high-priced books the latter method is not advisable,—that is, if you are at all sensitive. When it comes to the relative value of books and journals, the journals command first attention. In these days of rapid scientific discovery,

and as an aid in classification is invaluable. But unfortunately it is always an index of the past. One large folio volume is published each year and this may contain from two to four letters of the alphabet, and it is from twenty to twenty-two years before these same letters are again reached. The work is now in its third series, at letter D. The first volume of the first series appeared in 1880. But in spite of this, it is the medical librarian's constant guide. The *Index Medicus* is a quarterly, and practically covers world literature. The *Quarterly Cumulative Index* is by far the best arranged of any that we have from the point of view of usefulness: a straight alphabetic index of authors and subjects with no divisions and subdivisions. No explanation or assistance is required for its use by anyone. In addition to the general index of literature, it gives a list of new books published, arranged alphabetically according to author, also arranged in a classified list by comprehensive subjects; a list of publishers, with addresses (very useful); a list of recently issued government publications (also very useful); and a list of the journals indexed. The complete volume of 1923 contained a list of 251 journals from at least twenty-one different countries. It corresponds to



View of the general reading room.

many textbooks are out-of-date before they are published, but the best periodicals bring to us the last word in research and in treatment.

The reader of medicine is fortunate in reference aids; among them, of first importance, are the three indispensable indexes to medical literature: the *Index Catalogue* of the Surgeon General's Library, the *Index Medicus*, and the *Quarterly Cumulative Index of Current Medical Literature*. The first is the greatest medical index in existence

the *Readers' Guide* used in general libraries.

#### "Aids" to the Medical Library

In addition to the above, the American Institute of Medicine, New York, N. Y., publishes the *International Medical and Surgical Survey*, in the form of abstracts. This I can recommend as an excellent aid to a busy doctor who has only time to read in full the papers which are really of use to him. These abstracts give him the essence



Alcove and balcony bookstack.

of many articles, with reference to the journals in which they may be found. They should be of great value to the doctors situated in rural districts, at a long distance from consulting libraries.

Other "aids" which may be mentioned are:

The *International Abstracts of Surgery* (published in connection with the journal called *Surgery, Gynecology and Obstetrics*); Nelson's Medical Research Service Bureau; American Social Hygiene Association; Department of Literary Research of the American College of Surgeons, organized in 1921, with headquarters at the A. C. of S. Library in Chicago, and the Hospital Library and Service Bureau.

#### Hospital Library and Service Bureau

Special mention should be made, at this meeting, of the last named, the Hospital Library and Service Bureau, which serves those interested in the affairs of hospitals. It is intended as a repository and clearing house of all matter concerning hospitals, from the minutest point of building to the training of personnel and the collecting of vital statistics. This bureau, organized in 1920, has proved indispensable. Its service is utilized in the United States and in Canada and in twenty-two foreign countries. A report made to the American Hospital Association in 1923 states that 783 package libraries covering a total of 228 selected subjects are in circulation; and that this material has been sent to 2,633 people.<sup>1</sup> This same material, however, is utilized by many more who consult it at its headquarters.

Last, but certainly not least, among our reference aids are our own individual library bulletins. With all the aids above mentioned it would seem that these are hardly necessary, but there are always, and particularly in a hospital library, questions coming up which will not wait for the publication of *any* index, and which are perhaps of only temporary importance to a special group of men.

1. The report issued December 31, 1924, listed a total of 1,423 package libraries.

Again, the "family" atmosphere of the hospital library. There is a very large amount of reference work, and much of it on obscure subjects. For instance, literature wanted upon "The effects of ether upon the individual, particularly upon the liver in a diabetic patient"; "Widal's hemoclastic crisis, with description of original technique;" and "The parathyroid glands in relation to surgery;" etc.

Skimming the periodicals as they come in, coupled with a good memory, is a great help in meeting such requests as well as in keeping up with new developments and the librarian should so arrange her time that this will always be possible.

#### Difficulties of Medical Classification

Such a paper as this is perhaps hardly complete without touching upon the difficulties of medical classification. In Dewey, the numbers for medicine run from 610 to 619, but with the exception of 611 and 612,—anatomy and physiology, respectively, the classification is far from satisfactory, even in the 1919 edition. Certain diseases are incorrectly classified, and the division of surgery is sadly inadequate. The subject of "hospitals" practically amounts to nothing, while that of "nursing the sick" has no place at all. I have arranged, for my own use, a classification of hospital literature (based upon the Dewey numbers), and intend to attack the other subject as soon as my time will allow. The classification of the Library of Congress is used in some medical libraries, but I have never heard it spoken of with much enthusiasm.



Mezzanine aisle, second tier.

The best is, without question, that of the Boston Medical Library, and it has been adopted as a standard by the Medical Library Association. The only difficulty just at present is the impossibility of obtaining copies until its voluminous index is completed. Even in this, however, certain flaws are discovered by specialists; but it comes as near to perfection as is probably possible in the classi-

(Continued on page 263)

# THE HARPER HOSPITAL MENTAL HYGIENE CLINIC

By STEWART HAMILTON, M.D., SUPERINTENDENT, HARPER HOSPITAL, DETROIT, MICH.

TODAY, when emphasis is being laid more and more on preventive medicine, when the physician is quite as interested in conserving human efficiency as in curing disease itself and when social unadjustments, numerous because of the complexity of the present day life, are singularly allied with medical problems, the hospital out-patient department cannot be complete without its neuropsychiatric clinic.

Necessarily then, the function of the clinic is not only to diagnose feeble-mindedness, mental or organic nervous diseases and to recognize and treat any mental deviations, but to help the individual to adjust himself to his environment so that he may be a desirable member of group life. This may mean the finding of new employment especially adapted to the patient's needs; the adjustment of a particularly trying domestic situation or the reconstruction of his whole philosophy of thought.

## O. P. Department Maintains Fifteen Clinics

For many years Harper Hospital has had an out-patient service of fifteen clinics with an average daily attendance of 250 to 275 patients. It was not possible until September 1, 1924, however, to organize on the desired basis a neuropsychiatric clinic. The clinic is fortunate indeed to have as its director, Dr. L. A. Jacoby, who is also director of the psychopathic clinic, records court, Detroit.

There is also on the staff a trained neuropsychiatric social worker with broad experience in medical social work, a psychologist who does psychometric examinations and a clinic secretary, who has full charge of the routine details of the clinic.

The appointment system is used. Before the psychiatrist sees a patient, a complete social history including family history, occupational records, school records, in fact all pertinent facts that will in any way help in the analysis of the individual is worked out and written up in detail. This history is not taken alone from the patient, but is secured from previous employers, nearest relatives, schools and all natural sources.

So far as possible, each patient is registered in the medical clinic and all physical findings summarized before his first appointment with the psychiatrist.

In addition a psychometric study is made if indicated.

Inasmuch as the psychiatrist can give only two mornings a week, all preliminary work on each patient must be carefully done before he is seen by the psychiatrist.

A weekly conference of the psychiatrist and staff is held. At this time cases are presented and discussed as to diagnosis, disposition and the best available social plan for adjusting the patient in the community.

From October 1, 1924, until January 1, 1925, there were registered in the clinic, 182 patients. These were referred by other clinics of the out-patient service, the hospital itself, and various social agencies in the city, such as the children's agencies, protective organizations and department of special education.

## Personality Studies Made of Fifty Students

The clinic has just completed a very interesting piece of work in personality studies on fifty student probationers in the Farrand Training School, Harper Hospital. The result of this study will be published at a later date, by Miss Maude Watson, neuropsychiatric social worker.

The numerous outside, daily appeals evidence only too clearly a long felt community need for a neuropsychiatric

clinic in a general hospital, and it is the hope of Harper Hospital that this need may be met much more scientifically and adequately in the future than at present, when the clinic is new and quite inadequate to meet the many problems presented within its own out-patient service and hospital.

## SULPHIDES USED AS REFLECTORS OF ULTRA-VIOLET RAYS

"What is the best material for making laryngoscope mirrors?" was a question the Bureau of Standards undertook to answer. A laryngoscope is used in the treatment of the throat by means of sunlight, and in sunlight it is the ultra-violet rays that do the good, while the abundant visible light and heat rays do no good and are apt to cause burns. Hence what is wanted is a surface that will be a good reflector of ultra-violet rays, but will scatter or absorb light and heat.

The Bureau of Standards found, as the result of an investigation, that sulphides of certain metals give the results desired. These sulphides have a high metallic lustre, and proved to have a high selective reflection of the ultra-violet rays and a lower reflection of the visible and infra-red rays, which is just the opposite of the reflective properties of the metals.

The results of these tests are reported in Scientific Paper No. 493 of the Bureau of Standards, entitled "Ultra-violet Reflecting Power of Some Metals and Sulphides."

## THE MEDICAL LIBRARY IN THE HOSPITAL, KEY TO A THOUSAND PROBLEMS

(Continued from page 262)

fication of a subject in which scientific discovery and consequent change are so constant. Another, that of the College of Physicians of Philadelphia, has long been recognized as one of the very best. And, as mentioned above, the *Index Catalogue* of the Surgeon General's Library is of inestimable assistance.

To return to the hospital library itself, reports of other hospitals must be available, for they will be needed by trustees and by the administration; therefore, it is well to establish as many exchanges as possible, especially among the large and best known hospitals both in this country and abroad. Transactions of various societies will be called for by the visiting staff, and these are generally sent to libraries, upon request. Reprints of articles written by members of the staff should always be collected and carefully catalogued, for they form the history of the institution in the way of professional accomplishment. It is of importance that record be made of appointments, promotions, resignations and deaths of any and all members of the professional portion of the household. It is the librarian's part to keep in touch with all changes and developments, both personal and material. Along this line, collections of photographs and other pictures are of great value, and it is amazing how fast they come in, once the want is made known. The graduate interns of a great hospital look back to it as they do to their colleges, and are always glad to send something to be preserved in the archives.

The mass of material which may be accumulated in the hospital medical library is of many sorts and kinds, for here must be found "the key to a thousand problems."



## PLAN FOR A MODERN HOSPITAL PHARMACY

By EDWARD SWALLOW, FORMERLY PHARMACIST TO OUT-PATIENT DEPARTMENT, BELLEVUE HOSPITAL, NEW YORK, N. Y.

**T**HE importance of the pharmacy to the hospital needs no comment. Medical supplies are as necessary to the institution as cash is to a bank. The prime motive of this article is to suggest a plan and layout for a pharmacy that will make for greater efficiency from this particular part of the institution, and, thereby, effect a general saving. Anyone conversant with hospital conditions, knows that much time and labor are expended on the part of nurses, orderlies, and occasionally physicians, in going back and forth for drug supplies, from the pharmacy.

To give efficient service the pharmacist of today has to keep up with the great advancement made in medical science all along the line. He must have, in addition to the necessary drug supplies, the proper apparatus to work with, so as to be able to give all concerned the best results from his training, and meet the full requirements of the medical men in preparing in a scientific manner the various medicinal agents and compounds used in the treatment of disease, not forgetting the scientific preparation of antiseptic solutions and drugs required in the treatment of wounds.

### Pharmacy for 100-Bed Hospital

This plan suggested for an up-to-date hospital pharmacy provides for the requirements generally needed in a 100-bed hospital that has the usual operating room, laboratories, and other work and treatment rooms in addition to the wards. The equipment shown in the layout is, in the author's estimation, absolutely necessary for the proper performance of the pharmacist's various duties.

Availability adds greatly to the general efficiency of the service rendered by the drug store. Therefore, the location of the hospital pharmacy is of primary importance. Time is a very important thing in hospitals, and, as elsewhere, this is a vital economic factor. Economy with efficiency should be the slogan of all hospitals, and if time can be saved in carrying out their activities, not only is money saved with respect to the amount of help required, but better and more efficient service is obtained generally. Thus, the more available the pharmacy is to other parts of the institution, the better.

### Location an Important Factor

Preferably, the hospital pharmacy should be centrally located near the rear of the building, so as to be within easy distance of the main elevator connecting with the floors above. Fire hazard has to be considered, also smells and sundry fumes that occasionally arise in manufacturing certain preparations. Therefore, taking all things into consideration, the rear of the building is the best place for the hospital pharmacy. With the fire hazard in mind, provision has been made in the basement immediately under the main drug store for a fireproof vault, for the purpose of storing alcohol, ether, and other volatile and inflammable substances. Tinctures, generally speaking, should be stored where they are not exposed to air and direct sun-light or extremes of temperature, which latter are particularly harmful on account of possible change in menstruum caused by loss of alcohol. The fireproof vault, provided with the necessary shelving, is about the best place to store the main supplies of these alcoholic preparations. This applies also to such preparations as hydrogen dioxide.

The basement should be well lighted from the outside in addition to being equipped with plenty of electric lights, as it is here the pharmacist will manufacture ointments, tinctures, and sundry other preparations for stock. Syrups, essential oils, and fixed oils are best stored in the basement. Proper racks for percolators and filtering operations are needed and are provided for.

### Pharmacist in Charge of Water Distilling

As a plentiful supply of freshly distilled water is absolutely necessary in the hospital generally, and especially for the use of the pharmacist, a still for the production of all the distilled water required by the institution should be placed under the supervision of the pharmacist. To him, a plentiful supply of freshly distilled water means that he can use some in the preparation of the many different solutions kept in fairly large quantities, such as sodium bromide, potassium bromide, ammonium chloride, magnesium sulphate. Also when distilled water is used in the making of syrups and emulsions, they keep much longer and are less likely to suffer early deterioration. Of course, all solutions intended for hypodermic use, physiological salt solution, Ringier's solution, and the like, not only require freshly distilled water in their preparation but must be sterilized previous to being administered.

As plenty of steam is available in modern hospitals, a still connected with the steam plant is an advisable and an economical arrangement for furnishing all the distilled water required by the hospital. Based on a conservative estimate, distilled water costs about five cents a gallon plus transportation. By distilling in the institution, this water can be produced at a cost approximating one cent a gallon. This estimate shows how quickly a still pays for itself. Furthermore, this is not its sole advantage. Distilled water in hospitals where the distilled kind is necessary should be freely distilled and not allowed to remain in any kind of receptacle. When purchased from the outside, under the best conditions, one can never be sure how long the water has been standing or what state the receptacle was in when the water was poured in.

Several kinds of stills are on the market, none of which requires much space or a great deal of attention. There is on the market a still and storage tank type that gives from one to two gallons of distilled water an hour, with storage tank in proportion. It is a very useful piece of apparatus and occupies a space two feet wide, ten inches deep, and two feet high, in one corner of the basement under the drug store. This apparatus can be operated on any pressure from thirty pounds up, the higher the pressure the quicker the action of the apparatus.

### Proper Sterilizing Facilities

If full efficiency is to be obtained from all preparations issued from the pharmacy, provision must be made for the proper sterilization of such. In connection with this important subject, the following quotation from Schneider's *Pharmaceutical Bacteriology*, gives valuable information: "The pharmacist should know that bacteria, yeasts, and related organisms develop very promptly in all aromatic waters; in carelessly manipulated boiled and distilled water; in dilute solutions of acids and alkalies; in dilute alcoholic liquids; tinctures, infusions, extracts, decoctions,



The following list of abbreviations designate the various divisions and equipment of the pharmacy: Clo.—closet for cleaning utensils; Lav.—lavatory; P.C.—poison closet; D.K.—desk; D.C.—drug closet; S.—sink; S.T.—slate top counter; L.L.—lockers; Rad.—radiator; Ste.—sterilizer; Ref.—refrigerator; D.—dumbwaiter; C.—Counter; St.—slate end of table top; W.T.—Wood end of table top; E.O.C.—closet for essential oils and fixed oils; F.P.V.—fireproof vault; F.P.—filter and percolator racks; G.S.—gas stove on slate top counter; St.—distilled water still; B.B.—bottle bins.

in dilute salt solutions, mucilages, emulsions, in syrups of all kinds; lard, oils, fats, etc."

#### Sterilizing Instruments Required

For carrying out the different processes of sterilization usually required in a modern hospital pharmacy, an autoclave, a steam sterilizer, a Bunsen burner, a calcium chloride bath, a sandbath, and a filter are required. In regard to a steam sterilizer, there is on the market a pressure type dressing sterilizer that meets all requirements. Such a sterilizer would occupy a floor space two feet wide, three feet deep and about five feet high.

The refrigerator, or ice box, has become of ever increasing importance now that serums, antitoxins, vaccines, etc., have to be stored under proper conditions of temperature. Also, the pharmacist has many preparations such as mucilage, citrate of magnesia and prepared solutions that have been sterilized and need to be kept in the refrigerator. For this reason a fairly large one has been suggested for the main drug store.

#### Electric Dumbwaiter from Pharmacy

Particular attention is drawn to the electric dumbwaiter which extends from the pharmacy to the various floors. This feature is designed to save much time spent by nurses and orderlies in ordering and obtaining supplies. An electric "push-button" communicating to all the floors, and a telephone would remove the necessity of nurses, or orderlies leaving their respective wards. All orders for drug supplies could be sent and delivered by the dumbwaiter. This item alone is of considerable importance, as it gives all persons on the wards more time to attend to their duties and, thereby, directly increases the general efficiency of the institution.

Immediately outside the pharmacy proper is a small lobby supplied with a seat. This feature is designed to give more privacy to the pharmacist and prevent unwarranted entrance into the pharmacy. A glass partition with a dispensing window separates the lobby from the pharmacy. In one corner is a closet for storing brooms and other cleaning equipment. To the right, as you enter the drug room, is the laboratory which adjoins the poison

closet situated so as to be under the eye of the chief pharmacist whose desk is placed under the window. Nearby are a closet with drawers underneath for the stocking of drugs, the sink with drainboard under another window, and a slate topped counter for Bunsen burner and sandbath.

Next is another drug closet with shelves above, and then lockers for the pharmacists. The sterilizer and refrigerator are placed in a convenient position near the dumbwaiter that runs to the basement and affords an efficient means for bringing up supplies from the main stock of goods kept there. The large table in the center of drug store has a slate top at one end designed for its usefulness in rubbing down ointments upon a readily washable surface. Drawers are provided for labels, pill boxes, and other accessories. The weighing scales also find a place here. Along the middle of the table shelves are fixed to contain small bottles of more commonly used drugs. Closets for empty clean bottles, mortars, etc., are also provided underneath this table.

Entering the basement, one first sees a closet for the purpose of stocking essential and fixed oils, then the fireproof vault with shelving around the sides. Here will be stocked alcohol, ether, and tinctures. Filter and percolator racks come next, then the sink, with draining board, placed under a window, and a gas stove for manufacturing purposes, located upon a slate-topped counter. A door, through which supplies are received, leads to the outside grounds. The still for the production of distilled water is placed in a corner. Next comes a series of bins for the storage of empty bottles. The table in the center should have a slate top, as it can be washed up and kept cleaner than a wooden one. Beyond a drawer or two for spatulas, and other instruments nothing should be fixed under this table, in order that the concrete floor may be thoroughly cleansed.

#### CORRECTION

An error was made in listing the price of the bed blanket warmer in "The Organization of a Physiotherapy Clinic in a Civil Hospital," in our February issue, page 123. The cost should have read \$125 instead of \$1,250.



## THE INFORMATION DESK

*No satisfactory solution to a problem in your hospital is too trivial to pass on to other workers in the field. No question that perplexes you is too small to bring to the attention of those with greater experience in the field. This department is the readers' exchange, and its usefulness is dependent upon the measure in which its readers share their problems and their discoveries.*

### METALS SUITABLE FOR WASHING MACHINES

It is generally recognized that a metallic washer, if constructed of suitable material, will have a much longer life than one made of wood. In hospital laundry practice it is still the custom to admit steam into the washing machine, bring the goods to a boil, and submit the load to this high temperature for a considerable length of time. This has a tendency to "pulp" the wood, and thus the life of the machine is shortened.

Where hard water is used, the wood is covered by a water-insoluble substance known as lime soap, and this protective coating retards, to some extent, the disintegration of the wood. Where soft water is used, no coating of lime soap is formed, and therefore the machine has a shorter life with soft water than it has with hard. Another drawback to the wood washer rests in the fact that manufacturers no longer can secure as good material as was formerly available.

To be suitable for use in the construction of casings and cylinders of washing machines, a metal must be able to resist both alkaline and acid solutions, and they must not oxidize, as do iron and steel. Sometimes the latter metals are galvanized, that is given a thin protective coating of zinc. But this cannot be depended upon to last very long, especially if soft water is used, in which case the protective coating of lime soap is absent. Aluminum is not regarded as suitable, principally because it does not resist acids and alkalis.

Copper alloys, which include brass and bronze, and nickel alloys, which include nickel silver, have served fairly well in washer construction, and until recently have been considered the best metals for washer construction. Brass resists weak acids and alkali, but it does not resist strong caustic solutions nor strong mineral acids. Brass machines have shown a long life, and they have given satisfaction. By far the greatest complaint against them is that sometimes there is the formation of verdigris, a green deposit, which discolors fabrics and which is hard to remove. Part of this is caused by acetic acid, used as a sour, and part of it is caused by the action of the soap on the copper. Bronze presents about the same objectionable features as brass, and so do the various nickel silvers, all of which contain a large pro-

portion of copper, this sometimes being as high as seventy-five per cent.

Monel metal seems to be the most desirable metal of all for use in the construction of washer casings and cylinders. This is an alloy consisting of 67 per cent nickel, 28 per cent copper and 5 per cent iron. It resists alkalis, including strong solutions of caustic soda. It resists all weak acids and many strong ones. No oxidizing agents except very strong ones will affect it. It takes a high polish from the soap solution, and therefore the longer a cylinder is run the smoother it gets. No verdigris or other discoloring deposit is formed. And as monel metal has the strength of mild steel, casings and cylinders constructed of it will last a great many years. While these machines cost more than the ordinary types, it is economical to install them, because of their long life. In addition to this they afford a freedom from trouble, a very desirable quality in a machine.

### METHOD OF STERILIZING SURGICAL NEEDLES

Many experiments in an endeavor to overcome the rusting of surgical needles through boiling have proved the value of a non-corrosive protective covering for the needles after sterilizing. At St. Joseph's Hospital, St. Joseph, Mo., a satisfactory method has been found by shaving a little paraffin onto the gauze that held the needles, rolling it loosely and placing it in an open ointment jar and sterilizing it in an autoclave. Sets of needles suitable for various operations are kept on hand ready for use. At the close of the operation the instrument nurse places them in a small basin containing a strong solution of lysol where they remain till they can be washed and prepared for the next sterilization. In this way rusting is prevented at every point in the process of use and preparation for use, and fewer needles are lost than when they are thrown into the basin with the larger instruments. Through this method the selection of needles for each operation is done more quickly. This method has been in use for nearly two years and has proved satisfactory. The needles stay sharp and free from rust as before sterilization, thereby materially reducing replacement cost, and saving nurses much unproductive time formerly spent in polishing needles which did not stay bright through one sterilization.

Sometimes the film of dust that settles upon finished surfaces in large cities contains a little grease. For this reason, a little ammonia or diluted alkali added to the water will produce satisfactory results. Alkali will not injure the marble. But as the marble is limestone, acids will injure it and, therefore, should not be used.



## NURSING AND THE HOSPITAL

Conducted by CAROLYN E. GRAY, R.N.,

71 Willow Street,  
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### HOSPITAL ADMINISTRATIVE WORK FOR GRADUATE NURSES

By COLONEL LOUIS C. TRIMBLE, SUPERINTENDENT, POST-GRADUATE HOSPITAL, NEW YORK, N. Y.

**E**ACH year as we approach graduation time in the training school we find ourselves face to face with the problem, "What have we to offer the graduate nurse outside the field of private nursing, institutional supervision, or teaching undergraduate nurses?"

It is true that to a great many who have recently passed through their three years' training period there is little attraction in a type of service without a future, and it can be safely said that private duty nursing presents as small a future to the ambitious woman as the mind can readily conceive.

#### Nurse Training Prepares for Executive Work

In the training school office there is at best a minimum of positions, usually and properly filled by women of years of practical experience. Therefore, we find ourselves forced to turn to some kindred field where these talents may not be wasted. Partly for this reason, and partly to provide an additional attraction to bring young women into the training school, I am advocating a wider employment of graduate nurses in administrative and executive positions throughout the hospital.

The varieties of such services seem to be endless; certainly there is no end to the number wherein nurse training would not be of tremendous advantage both to the institution and to the incumbent. In two different hospitals I have known of graduate nurses who have been appointed to the very important position of purchasing agent and in both instances they have filled the position exceptionally well. Their success has been due to their professional training and, in a great measure, to the fact that they have applied the high ideals of nursing service to their positions.

It is a well-known fact that institutions are habitually cursed with many forms of graft, some petty, some serious, all with an extremely bad effect on those who encounter it, as well as on those who only have knowledge of its existence. Therefore, it seems as though a nurse who has through three years been imbued with ideals of her profession, together with a willingness to live up to those ideals even at considerable personal sacrifice, should be successful as a hospital executive.

Of course, it is perfectly true that not everything used in a hospital is bought in accordance with nursing requirements or standards, but it is true that whatever the commodity, be it coal for the heating plant, lumber for

repairs, or any one of a thousand things, there is a subtle difference between the use to which these commodities would be put in a hospital as compared to their use in the ordinary commercial building or plant.

#### Position of Admitting and Information Clerks

In other instances, I have seen the position of admitting and information clerks filled throughout both day and night by graduate nurses and without doubt the effect of this has been most beneficial to patients, to their friends and, above all, in establishing, within a short time, a reputation for the institution in the minds of those paying their first visit. These two places may be justly termed the index to the institution, for here we have our first direct contact with the general public and here this same general public is more than apt to form an opinion which no amount of after apology can change if the impression be not of the best. It would seem advisable that the information desk and admitting office should be interchangeable as to personnel, and this interchange should be frequent, thereby enabling those in the two positions to become more familiar with all the details concerning patients and doctors. Furthermore, it would seem peculiarly beneficial to the institution to utilize nurses to make this direct contact.

#### Where Secretarial Work May Be Combined

There is probably no more abused word in the business world today than that of "secretary," largely because this title is bestowed not from recognition of the worthiness of the individual receiving it, so much as from the desire of the immediate employer to increase the dignity of his position. But even if we eliminate secretaries of the purely stenographic type, there would still remain a goodly number of positions of a secretarial nature in which nursing education would enhance very materially the value of the incumbent.

Certainly, with the steadily increasing number of surgeons who require records of their operations to be taken directly in the operating room, we should find a very broad field here alone for the nurse who has some knowledge of stenography.

#### Opportunity in the Housekeeping Department

Probably one of the most neglected and least thought of departments in the hospital is that of housekeeping.

Yet it would seem that the importance thereof could not be exaggerated for the simple reason that surgical technique, nursing training and, in fact, the very life of everyone in the institution is most closely related to this department.

How can we expect to maintain a sterile area in the operating room, unless the maids and porters have performed their work with some degree of proficiency previous to the operation? Of equal importance, though possibly not receiving equal consideration, is the question of how to maintain a ward free from dust and surgically clean, if those who use the ward must enter it after passing through an untidy hallway. Can we expect to attain the proper cooperation between the department of nursing and the department of housekeeping unless we place our housekeeping in charge of someone who understands what is meant by "sterile area" and "surgically clean"?

Is it not, therefore, essential that we elevate this position of "housekeeper" to a plane which would make it attractive to someone of an executive and administrative type, who would bring to the position the knowledge and enthusiasm which should accompany the graduate when she leaves her school to face the world as a wage-earner?

#### The Nurse as a Superintendent

For years it has been customary for a goodly number of nurses to become superintendents and assistant superintendents of hospitals, in many cases assuming the responsibility of a large institution. Unfortunately, many nurses bring to this work experience and training based only on the care of patients, and their superintendency often brings disastrous results. Particularly would this result appear to be unfortunate in the selection and supervision of non-professional employees and in an attempt to plan or direct work of the financial departments. The latter work would be most serious when coming in contact with a directorate composed largely of business men who desire and should have a capable and satisfactory business administration, in order that the expenses and maintenance are in proportion to income. Would it not, therefore, be infinitely wiser for those who have an aptitude toward executive management to spend at least a brief apprenticeship in some department foreign to nursing, which would give a more extensive preparation, coupled with an invaluable knowledge of at least some of the multitudinous problems which must face every executive?

Even though the hospital in question be small, there would remain an even stronger argument for this class of training, because the larger the institution, the more apt it is to have highly trained and well paid specialists at the head of the more important departments, while in the smaller institutions this work is more apt to be left to those of a purely clerical nature and training.

#### Post-Graduate Course for Executives

There will be certain cardinal objections to this plan, one of which may easily be the lack of time for specialized training, another the salary which these positions are now paying. These objections can be met only by cooperation and thoughtful consideration on the part of hospital authorities and the nurse, herself, for it is very true that the present curriculum is already crowded beyond reason, and certainly beyond any thought of expansion. Yet in the vast majority of cases where the nurse has expressed a desire to take up institutional work, it would seem quite simple to have her remain in the school for an extra period of from three to six months following graduation. During this time she could be studying the particular spe-

cialty which she selects, receive maintenance the same as when a student nurse, but no salary until she has mastered the details of her new position.

It is a well-known fact that hospitals pay smaller salaries, demand longer hours and, in the majority of cases, secure a poorer type of employee than almost any other business enterprise.

To a large measure, they have been able to do this because they have given meals or living quarters or some similar attraction in lieu of salary, whereas for those in executive positions as suggested, this would not be feasible or practical as these women would cease to do nursing in the true sense of the word and would have no place in the activities of the training school, and there would be no justification for them to reside in the nurses' home; therefore, we must expect to pay salaries commensurate with the living conditions of the community in which we are located, and while these salaries may add a considerable sum to our payroll, I am of the opinion that the better results which would be obtained and the finer service rendered would more than repay us for the investment, and I am not sure but that, in many cases, we would find it possible to reduce the number of employees, thereby bringing the payroll nearer to its former level.

#### Economic Opportunities in Other Fields

In any discussion of salary, in order to give our argument value, we must use a certain amount of comparison, and I venture to state, after a very considerable study of the subject partly through conversation with special nurses and partly through other sources, that the average yearly income of the special nurse rarely exceeds eighteen hundred dollars a year and in the majority of cases is nearer fifteen hundred. It must be remembered that time lost by reason of sickness, vacations or other personal reasons is also lost in so far as its earning power is concerned. On the other hand, there are practically no salaried positions which do not carry with them a reasonable vacation period as well as an allowance for a certain period of ill-health, at any rate after a minimum of service, usually from one to two years.

The future, too, must be considered when attempting to decide upon a proper career to follow, and it is not probable that the next few years will show any material difference in the status, income or hours of the graduate nurse doing special duty and I say this in spite of the great amount of discussion regarding the eight hour day for the reason that so far these discussions have not produced any suggestions sufficiently tangible to be worthy of consideration, whereas it is a well known fact that even in hospitals the office worker is rarely on a schedule requiring more than forty-eight working hours a week, and the holidays are usually divided among a limited group in such a manner as to permit each one to enjoy possibly three out of every four.

In closing, I might say that this article has not been written with the idea of belittling the work of the graduate nurse, which, in the majority of instances, is of the highest order and worthy of more consideration and higher remuneration. In the main it is intended to encourage those nurses who have found bedside nursing not to be as attractive as they anticipated, to open to them other fields of activity in the hospital world and to render the knowledge gained during the training period of the greatest value.

"What is youth? A dancing billow,  
Winds behind, and rocks before!"—Wordsworth.

## TRAINING ATTENDANTS TO SUPPLEMENT THE WORK OF GRADUATE NURSES

By ETHEL P. CLARKE, DIRECTOR, INDIANA UNIVERSITY TRAINING SCHOOL FOR NURSES, INDIANAPOLIS, IND.

IN attempting to discuss the matter of training for a group of women who will take upon themselves certain responsibilities in the care of the sick, perhaps the first question that arises is: Why do we need trained attendants since nurses fill the requirements? In considering this problem it must be borne in mind that we are not dealing with a new development. The Rockefeller Foundation report states that of the 300,000 nurses, male and female, in the United States in 1920, slightly more than half were below the standard of the graduate nurse. The practical nurse, or trained attendant, is here to stay and there is little doubt but that there is a real need for her services.

### Legal Provision for Trained Attendants

That there are opportunities for misuse and that the public, the nursing and medical professions should be protected, there is but little doubt. For this reason no organized attempts to train such a group should be undertaken without proper legislation. New York, Missouri, Michigan, California and Maryland have such laws, and in 1921 legal provision for trained attendants was made in Indiana by an amendment to the nurse practice act.

This law requires that the school for attendants be established in connection with a hospital or sanitarium where there is no training school for nurses. The hospital or sanitarium must provide teaching and experience for a period of twelve months in: (a) care of bed patients; and (b) care of chronic and convalescent sick. It may also include care of the tuberculous, mentally deficient, children and aged.

The superintendent of the school must be a nurse registered in Indiana who is qualified to instruct students in practical nursing procedures and to give or supervise their instruction and practical work. On completion of the course, they may apply to the State Board of Examination and Registration of Nurses for a practical examination which, when passed successfully, gives them the right to practice as "trained attendants" in the state.

### Distribution of Trained Nurses

The problem that directly confronts us is that of giving nursing care to the sick of the community. We hear much of the shortage of nurses, but, as a matter of fact, the census reports show an increase in trained registered nurses from 82,327 in 1910 to 149,128 in 1920—a phenomenal increase of 83 per cent. Some 12,000 of these are employed as public health nurses, but as the majority of nurses are concentrated in the large cities and towns, the rural districts frequently suffer for lack of adequate care. At present there are in Indiana nine positions open for public health nurses in counties and small towns, and it is difficult to get properly qualified women to fill them.

As to what constitutes good training for nurses there is much difference of opinion. Some physicians think that our progressive schools are sending out women that are over-trained even for the care of acutely sick patients, while others are demanding well-educated, well-trained nurses and are assisting the nursing profession in its efforts to advance nursing education. Within the past few years there have been efforts in a number of states

to lower educational standards which are hazardous for the acutely sick patient, and jeopardize the safety of the public. The best type of legislators and physicians as well as the nursing profession have resisted these efforts, and it is well that they have.

The Rockefeller report makes a clear statement on this matter (Conclusion 3, page 13).

"That for the care of persons suffering from serious and acute disease the safety of the patient, and the responsibility of the medical and nursing professions, demand the maintenance of the standards of educational attainment now generally accepted by the best sentiment of both professions and embodied in the legislation of the more progressive states; and that any attempt to lower these standards would be fraught with real danger to the public."

### A Field for the Trained Aide

We are confronted with this situation: There are certain physicians, including public health administrators, who are demanding more highly qualified nurses than are now usually available; there are other physicians who are seeking nurses who do good bedside nursing for the ordinary case that is not acute, but whose abilities are limited to that field. It is probable that there is justification for both demands. It is certain that the care of serious illness and public health work demand women of preparation and personality with a sound technical education, while the care of mild and chronic illness and of convalescents might well be given to women of more limited opportunities and preparation.

If we draw the distinction as to type of service needed on the basis of the degree of illness we are on safe ground. It is very certain that the child with an acute condition of malnutrition or the adult with pneumonia or grave cardiac condition requires the most highly skilled nursing that we can give, just as both types require the best medical skill, whether or not such services are within their means. Investigation has revealed the fact that nurses on private duty spend at least one-fourth to one-half of their time taking care of patients that can be well cared for by women with a lesser preparation. This statement is made by the Rockefeller Committee after questioning physicians, as well as nurses.

In discussing a group to care for less acute cases, we are not dealing with something that is new. As before stated, in 1920 there were 300,000 people giving nursing care to the sick. Of these, slightly more than half were below the standard of the graduate nurse. The practical nurse, or nursing aide, is not a new type just coming to our ken, she is here now and has been for many years, though often unnamed, unrecognized, and untrained.

### Unregulated Attendants a Menace

That such a group of unregulated and partially trained workers may be a menace to the public, there is little doubt. The legislative standards for which the nursing profession has struggled for many years, and in which it has been supported by the best physicians, have been secured for the protection of the public as well as for the advancement of nursing education. It is for this reason



that a number of states, including Indiana, have secured legislation providing for the training of a less highly qualified group to be known as "trained attendants."

That the evolution of nursing education is making the training of nurses an increasingly difficult matter for some of the smaller schools we will admit, for affiliation with schools connected with larger hospitals is of great assistance provided that the basic preparation is sufficiently sound. For the special hospital unable to arrange for affiliation, for the small hospital with a daily average number of patients that is really too low to offer proper clinical experience, and has not the funds necessary adequately to maintain a school, some means of nursing the patients must be found that is safe for the patients, that does not exploit the young woman who is doing the work, and that meets with the approval of the board of examiners. It is in hospitals of this type that it would be desirable to organize a school for attendants. The opportunity should be available to women of rather different preparation from those that enter our nursing schools. It is sufficient for them to have a grammar school education, the age limit might be more flexible than for students in the nursing schools, it should not be below eighteen but it might be as high as forty to forty-five years.

#### Creating Standards for Attendants

It is important that these students have good training in household economics and cookery; sometimes the preparation of a good meal, knowing how to put a room in order will do more for the convalescence of the mother than much medicine. This training may well be given in the students' home, and should occupy at least one month. Good teaching in the elementary nursing procedures is essential. Attendants must know the ordinary things necessary for the care and comfort of a bed patient and how to carry out simple treatments under a physician's directions.

It is important that they understand the simple laws of hygiene and sanitation and that they are taught enough about bacteria to make them safe in the sickroom and of some help to the community. Throughout their training it will be essential to have enough graduate nurses in the hospital to provide good supervision.

At the end of the year's training they are ready to take the examination offered by the board of nurse examiners and upon successfully passing, are free to practice in the state as trained attendants, and to wear the state pin when on duty. There would surely be opportunities for some to stay on in the hospital on a salary. This would serve to give the institution a stable staff, while others would go into homes and nurse.

#### Ethical Training for Attendants

It is important that these attendants have sound ethical training and understand clearly their responsibility and their limitations. The physician is clearly responsible for stating to the family just what sort of service is being employed—that of a registered nurse or a trained attendant, and registries should be careful to have it understood when they send women out on cases.

#### General Antipathy Toward Attendants

Some physicians and some nurses seem to feel an antipathy to the training of attendants and to their employment after training, but having known of several institutions where such work has been carried on successfully with entire satisfaction to physicians, nurses and patients, I must say I feel no such antipathy. Nobody

expects it to be a solution to the whole problem of nursing the sick, but it will make easier the care of patients in small hospitals that cannot and should not have schools; it will increase the number of trained persons engaged in such work and it will create a group of women with a sound but limited training who may go into homes and nurse patients who are not acutely sick at a lesser cost than the registered nurse. As it is not advisable to train attendants and nurses in the same hospital, neither is it advisable to employ them on special duty in a hospital that is training nurses, the director of the school will rightly object, for the organization of the two types of workers cannot be the same.

Plans for such a course may be found in the booklet on requirements for nursing schools published by the board of examiners, and also in the Rockefeller report where the whole matter is fully discussed.

I hope that some hospitals in Indiana will see fit to organize such a course under the direction of an able, clear thinking nurse, and if it is wisely planned and supervised, I believe success will attend their efforts.

#### REPORT OF INFORMAL STUDY OF COLORED NURSE PROBLEM NOW AVAILABLE

A report of an informal study of the educational facilities for colored nurses and their use in hospital, visiting and public health nursing, conducted during the past year by the Hospital Library and Service Bureau, Chicago, Ill., has just been made public. The study was made under the supervision of Miss Donelda R. Hamlin, director of the bureau, and was financed by a group of persons interested in this survey which is the first of its kind to be conducted in this country.

The study brings out strikingly the present limited opportunity for the training and services of colored interns and nurses in general hospitals in this country. Out of the 1688 schools of nursing which responded to the questionnaire only 54 schools admit colored students. Of these fifty-four schools of nursing, twenty-five were found to be in hospitals for colored or connected with departments for colored, maintained by municipalities. Nineteen were in hospitals whose capacity did not exceed fifty beds. Twenty-eight states were found to be without accredited schools for colored nurses.

A list was obtained of 160 colored hospitals. Twenty-one of the schools of nursing connected with these colored hospitals advised that colored students were admitted and colored graduates employed. None of these schools was on the accredited list, although four have been placed on the more recent list of accredited schools. This makes a total of fifty-eight accredited schools where colored women may obtain their nursing education.

The study was conducted primarily to obtain information on the educational facilities for colored nurses, the organization of schools and hospitals admitting colored nurses, and the number of colored graduate nurses used regularly or for special duty, by hospitals. From the community aspect it aimed to learn the use of colored graduate nurses by city, county and state departments of health, and the supply and demand for this work.

Information was sought from all the accredited schools of nursing in the United States, now numbering 1696, the special list of 160 institutions reported as hospitals for the colored not on the list of accredited schools of nursing forty-eight state boards of nurse examiners and 933 city, county and state health officers. The city officers were se-

(Continued on page 294)

## DIETETICS AND INSTITUTIONAL FOOD SERVICE

Conducted by LULU G. GRAVES,  
798 Lexington Avenue, New York, N. Y.

### THE DIETITIAN AND HER EQUIPMENT\*

By VERA HOWARD, CONSULTANT DIETITIAN, CHICAGO, ILL.

IT IS extremely difficult even to attempt to cover the subject of kitchen equipment for hospitals as a whole, and at the same time reach the root of the individual problems that confront each dietitian. It has seemed to me that the best compromise that I can make will be to explain, as well as I can, the reasoning that leads to the selection of equipment for the model kitchen. (Displayed in the exposition hall of the A. H. A. Buffalo Conference, October, 1924.)

This kitchen has been installed with the idea of encouraging discussion and promoting more uniform standards of food service for hospitals. It is not expected that all will agree with the designer in every respect but it should at least cause serious thought which cannot fail to be helpful to those interested in the better food service.

The model kitchen represents what is believed to be required for the most satisfactory service in a hospital of seventy-five bed capacity. This includes, of course, the service for nurses, employees and doctors as well as the maximum number of patients. It may seem at first that the equipment exceeds the requirements, but I do not believe that this is true. It is undoubtedly possible to operate a hospital of that size with a smaller kitchen and with less equipment, just as it would be possible to make a much more elaborate display with white enamel or more ornamental fixtures, but the aim has not been to make this a commercial exhibit nor to show how much or how little can be expended in equipping such a kitchen. Rather the idea has been to show equipment which will give the greatest amount of service without unnecessary expense. More elaborate and decorative fixtures can always be substituted if funds are available for such expenditure.

The dietary department is the most neglected and the least considered of any department in the modern hospital.

For that reason and because it either directly or indirectly affects every other department, it is the subject of the greatest criticism. Dietitians are often blamed for poor food and poor service, when really the fault is in poor planning and improper facilities for preparing and serving the food.

The first problem that arises in planning a kitchen is space. Fortunately the American Hospital Association has been very generous in this regard, but such is not always true. Very often the space which is not thought to be desirable for any other purpose is assigned to the kitchen. The relation between the kitchen and other parts of the building is of the greatest importance. There must be direct communication with the source of supply, and the bugbear of cold food will be very much lessened if a practical means of food distribution is thought out and arranged for in the beginning.

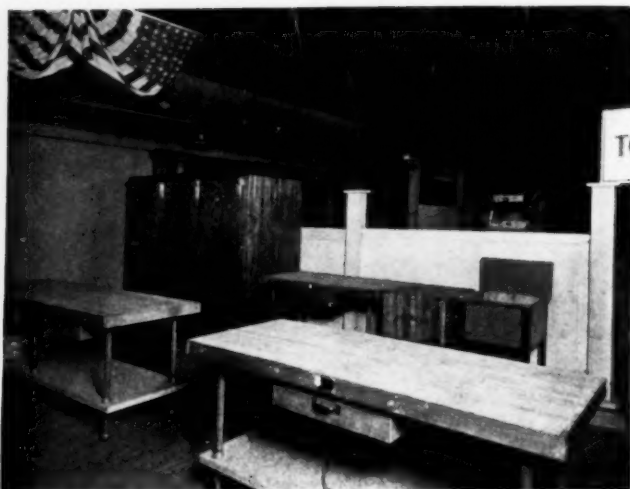


View of the model kitchen showing stoves and cooking utensils.

Plumbing and steam connections, ventilation and lighting for the kitchen should all be considered and decided on before building contracts are let. Otherwise there will very likely be additional expense in tearing out the floors to make proper connections, or the arrangement of equipment must be adapted to the plumbing, which is never to the best advantage.

Every person seriously interested in hospital construction will have an idea that the part he or she is especially interested in, is the most important. Naturally, it is impossible for an architect to satisfy all department heads and the ones who are most insistent are usually the ones who have the most attention. The trouble with the dietary department seems to be that dietitians so rarely have anything to say about the plans or even the equipment until the whole thing is arranged. Perhaps one great difficulty is a lack of practical and coordinate ideas which we, as dietitians, are able to present. We have good individual ideas but they are merely considered "fads" and "women's

\*Read before the annual meeting of the Hospital Dietetic Council, Buffalo, N. Y., October 9, 1924.



A view of the model kitchen showing large work tables.

notions" by the majority of engineers and architects.

If we can arrive at certain standards on which we are agreed and which conform to the best building practices, we shall have made a real contribution in this field and we shall be able to command the respect and consideration of builders and administrators.

Plans for kitchens, of course, depend upon the size and shape of the space given to them. Each plan is a different problem, so that it is not possible to lay down definite rules. We can, however, come to more definite conclusions on the equipment needed.

#### Equipped to Serve Seventy-five Patients

The model kitchen is equipped with everything which it is thought will contribute to the efficiency of a hospital for seventy-five patients and the necessary personnel. Of just what does that consist?

First, a storage refrigerator. This refrigerator is large enough to take care of the perishable food supply for three or four days' time. The exact size required depends chiefly upon the location of the hospital and the frequency of receiving supplies. This again differs with the individual case but it is better that the refrigerator should be too large than too small. The minimum capacity should accommodate at least three days' supply. The refrigerator is supplied with shelves on one side of the large center ice compartment and on the other side it is equipped with hooks for hanging meat. The walls are of wood in two layers with tightly packed insulating material between. Many of the large boxes are built up of cork board and cement, a very good construction and one which lends itself to any size or shape desired. They may be tiled the same as any wall, if desired, but special finishes are rather for appearance than for added usefulness.

The circulation of air in a refrigerator is important and is controlled by baffle walls, the position of which keeps the air moving in a definite direction as it passes over the ice, where it becomes cooled, falls, and rises again after passing through the food storage compartments.

Many hospitals have a central artificial refrigeration plant. A few automatically refrigerated boxes are in use, but it is more usual to find a central cooling plant complete with ice-making machinery, a decided advantage where ice is used for ice bags and ice packs as well as for the kitchen. If mechanical refrigeration is employed, the brine or ammonia coils may be placed in the com-

partment provided for ice. This does not apply to all boxes, however, as some are built only for ice, and others only for coils.

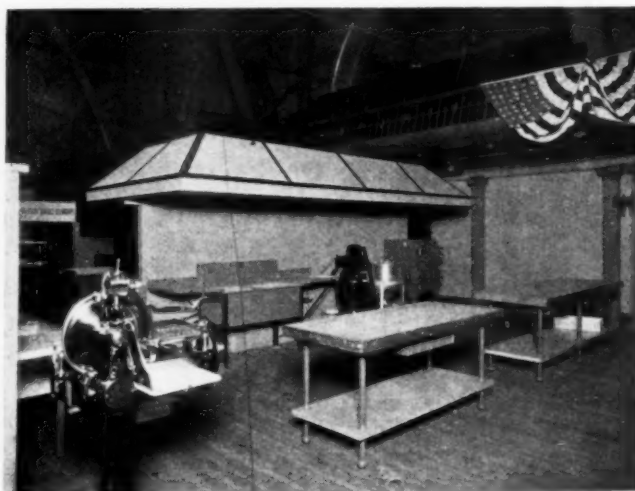
#### Small Refrigerator for Food

A small refrigerator is included in the model kitchen for keeping prepared food such as jellies and salads for the trays and the tables. This refrigerator is insulated with cork board, the material which has been proved most effective for this purpose. The interior of the box is lined with seamless white vitreous enamel and is very durable and easy to keep clean. The same model may be obtained with a white enamel exterior instead of oak if desired. For cutting and trimming meat, a meat block, maple top cutting bench and sink are provided. These fixtures are located near the storage refrigerator.

Tables with sectional maple tops are selected for vegetable preparation, in addition to a special sink for washing vegetables and a small sized vegetable peeler. The peeler may be used for carrots, turnips, etc., as well as for potatoes. The principle of peeling potatoes mechanically is the same in nearly all machines. The interior of the hopper is covered with some rough material such as carborundum or with a mixture of concrete and quartz. The bottom disc is arranged to revolve rapidly either by motor power or by means of a handle, and the vegetables are thrown forcibly against the sides literally grating off the outer layers. It would be possible by continuing this process to peel the potatoes quite clean, but that would remove so much of the edible part of the vegetable that they are generally taken out after the first layer is removed and the eyes and imperfections are taken out by hand. An important thing to consider in buying a peeler is the ease of renewing the rough coating of the disc and hopper which wears out with use and must eventually be replaced.

The parings of the vegetable are washed away by a continuous flow of water through the machine. This refuse, carried off by a waste pipe, would, if connected directly to the sewer, in a short time cause the drains to become clogged. Instead, it is put through a strainer bucket with a removable sieve which collects the peelings and permits the water to pass on into the drain.

It is assumed that the cooking in this kitchen will be done as far as possible, by steam. In most hospitals steam is required for sterilizers and it is therefore available for cooking purposes. Gas boilers are occasionally and effectively used to generate steam for cooking where it



Some special apparatus of the model kitchen.



is not practical to operate coal boilers for this work.

Steam jacket kettles have been standard equipment for many years. These kettles are made with double walls. Sometimes the outer wall or jacket extends to the top of the kettle as a full jacket kettle; generally only two-thirds of the side is jacketed. In any case there is a space between the two walls into which high pressure steam is introduced, acting in a measure like a double boiler except that the steam registers a high temperature and it is possible to make the contents of the kettle boil, which cannot be done with a double boiler. Jacket kettles are built in any size required, the one selected being twenty-five gallon capacity. An aluminum kettle was decided upon in preference to copper which is difficult to keep clean, and must be retinned every six months, or to solid nickel, which is very expensive.

Actual double boilers made on a large scale for institutional work are called cereal cookers. They are convenient not only for cooking cereals, but also for making custards or any article that requires stirring often or cooking at comparatively low temperature. For a hospital no larger than seventy-five beds that kind of cooking is done on the range.

Another important steam fixture included, is the vegetable steamer. This type of steamer comes with one, two, three, and sometimes four compartments arranged one above the other. Each compartment has its own steam connections and may be operated independently of the others. For the model kitchen, a two compartment steamer was selected. It is supplied with an assortment of solid and perforated baskets for holding the food. The steamer is constructed of heavy boiler plate steel and made throughout of sufficient strength to resist the ordinary wear to which it may be subjected. The doors are tight fitting and steam proof. They are arranged in such a way that in opening the door the steam is automatically shut off, removing all the danger of burning the operator. The baskets rest on a sliding shelf attached to the door by means of a lever so that they are drawn out of the steamer into view as the door is opened. In other words, three operations are accomplished at one time; the door opens, shuts off the steam supply and draws out the basket. Closing the door naturally reverses the operation, replacing the baskets and releasing the steam. The steamer is designed to take care of any cooking that can be done satisfactorily with steam. These are not pressure boilers, the steam pressure inside the basket being probably not over three pounds.

Where cooking is done by steam there is bound to be more or less water so that it is necessary to provide a drip pan under these fixtures to carry away the condensed moisture. This is sometimes taken care of by a special construction of the floor at that point, otherwise a steel pan such as the one used in the model kitchen is set under the steamers and kettles, with a direct connection to the floor drain.

Ranges are required for cooking which cannot well be

done by steam. A good-sized gas range was selected for the model kitchen and also an electric range. It is assumed that most of the heavy cooking will be done with the electric range, the gas range being chiefly for short orders. It is to be remembered that the hospital this kitchen is expected to serve has no other kitchen and all special cooking for diets as well as the general cooking must be done with these ranges.

Electric ranges are becoming increasingly popular for hospital use, largely because electricity is the cleanest fuel that can be used. Many important improvements have been made recently in the construction of electric ranges and they are to be recommended in any location where the rate for electricity is not proportionately far in excess of the gas rate. It is estimated that electricity at three cents a kilowatt hour is equal to gas at one dollar and a quarter per thousand feet. From this it can be determined whether or not the rate for electricity will be prohibitive in price in any particular locality. The

special features of the electric range on display is the construction and arrangement of the heating units. In the top they are applied so that the heat is thrown upward and concentrated where it is most needed. The method of application makes it possible to renew the heating strands when they are burned out without discarding the top plate to which they are attached. In the oven there is one heating element below and one above, so that the heat is evenly distributed.

A gas broiler is provided for cooking steaks and chops, and the like, and may also be used for mak-

ing toast in emergency. It is planned to make the toast for the trays with an automatic electric toaster. This toaster will make from eight to twelve slices at one time and requires so little attention that the toast is made while the trays are being served and in that way the toast for each tray is absolutely fresh. There is no practical way of keeping toast in good condition for any length of time, so this is a very important feature.

The bake oven is a compact fixture with four shelves, each shelf holding a roll pan eighteen by twenty-six inches. Each opening has a separate drop door and there is an even distribution of hot air under the decks which are of three-quarters-inch fire brick. This type is not especially recommended for baking bread, although it will do so if necessary. It is more properly intended for cakes, pastries and puddings.

Over the cooking units, that is, ranges, broiler, oven and steam cooker, a canopy is indicated for carrying off fumes, smoke and steam.

The baker's table stands opposite the oven and is equipped with metal bins and drawers for keeping flour, sugar, cereals and so forth. Metal is preferable to wood for these bins, as it is a protection against mice and vermin that get into a kitchen in spite of all precautions. There is also a baker's cabinet for keeping pans and small utensils and for storing bakery goods until used.

In front of the range is a cook's table with a pan rack suspended above. The table is arranged with a plate



A corner of the model kitchen showing equipment for food service.

warmer below on the serving side, and there is a shelf on the cook's side. The top is made of heavy monel metal.

### Mixing Machines

There are several mixing machines of merit on the market. One machine was selected because of its ease of operation, its especially fine workmanship and superior materials. The small machine with two bowls, one twenty quart and one thirty quart is the size best adapted for small institutions. Many special attachments may be used with the machine in addition to the regular beating equipment. Among those included are a chopping machine, a coffee grinder and a vegetable slicer, all of which can be used to advantage. Some of the uses of the mixer aside from the special attachments are mashing potatoes, mixing batters and doughs, beating eggs, whipping cream and gelatines and practically everything that requires stirring or beating.

A small ice cream freezer was included in this equipment because, while it is not always practical to install a large freezer, even a small one operated by motor power greatly lessens the labor of making frozen desserts. If one canful of cream is not sufficient, it is packed away and another can used for the second freezing. The portable freezer is pushed out of the way when not in use. This small model should appeal to many who are now buying ice cream or freezing it by hand.

### Dishwashing Machines Needed

Dishwashing machines are practically indispensable and the one most universally used for hospitals is a well-known type of machine which has a number of good points, one of which is the revolving spray. The dishes are stacked into baskets and pushed into the machine. The wash water which is kept at a moderately high temperature is pumped up by motor power through the spray arms both from above and from below with tremendous force, striking the dishes from every angle. The washing is continued for a short period depending on the kind of dishes in the machine. Then the rinsing spray is turned on. The water for the rinsing must be very hot in order to dry the dishes quickly without streaking.

This machine is made in several sizes from the Model R with a capacity of 1,200 dishes per hour to the Model FF with a 15,000 dish capacity. The Model MM chosen for the exhibit has a capacity of 3,000 pieces per hour and is the only model which has doors on three sides so that it may be operated in a corner as well as along a straight wall. The one on display is constructed of galvanized iron, although all models are made in both copper and in monel as well. The larger models have a continuous steel chain belt which automatically conveys the dish baskets through the machine.

With any dishwashing machine it is necessary to have a set of dishwashing tables for clean and soiled dishes. The most nearly perfect arrangement is an adaptation of a hollow square. This gives the operator room to work without interference and with a minimum of wasted energy. The dishes are dumped on the soiled dish table which is provided with a scraping block. After having heavy refuse removed, the dishes are stacked in the baskets and put through the machine (if a basket machine is in use) coming out on the other side ready to be piled up for use. It is usual to wash the glasses and silver by hand, and for this purpose a sink is set into the dish table at a convenient point.

Since all trays are to be served from this kitchen, it is necessary to have certain equipment which would otherwise appear in the serving rooms. A set-up cabinet is

essential for keeping the dishes, trays, silver and linen. After the trays are set with linen and silver there must be some place to put them and for this purpose we have tray racks. The sized rack in the model kitchen will hold eighteen trays of medium size, and there are four racks.

Close to the set-up cabinet and also near the dumb waiter, is the steam table. This is a standard piece of equipment, which, as everyone knows, is designed to keep food hot from the time it is prepared until it is served, without actually cooking it further. The jars rest in a pan of water which is kept hot by steam, gas or other means. Below the steam table there is a dishwarmer with sliding doors on both sides so that it is accessible from the front or the back.

Next to the steam table and dishwasher, is the urn stand with space for a combination coffee urn and a Lyons cream and milk urn. Below the top of this fixture also there is a warmer for the tea and coffee pots. The combination coffee urn is not a new idea, but it is only within the last two years that it has reached any degree of perfection. The main difference between a combination urn and a regulation battery is this, from a dietitian's point of view: a regulation battery of urns consists of a hot water urn and one or two coffee urns with surrounding jackets of hot water to prevent the coffee being overcooked. The water is heated in the water urn and drawn over into the coffee urns, passing through the coffee which is suspended in the urn in a bag or a tricolator. The coffee must be repoured through the grounds three or four times to obtain the full strength of the coffee.

### Urns and Their Use

With the combination urn the same principle is applied except that the water urn surrounds the coffee urn and is drawn over from the outer to the inner jar, thereby saving considerable space. The water in the outer jar may be used for making tea in individual pots also.

One good type of urn has between the water and the coffee jar, an air space which acts as an insulator and permits the water jar to be refilled without perceptibly cooling the coffee. The coffee jar is made of monel metal which makes it practically indestructible. There has been in some minds a question as to whether this metal affects the flavor of the coffee and it has been subjected to the most rigid scientific tests, which prove beyond a doubt that there is no chemical action which could cause any change in the flavor. The special percolating spray and strainer at the top of the coffee jar is so constructed that it is not necessary to repour the coffee, as all the strength is obtained from the first pouring. Filter paper only should be used with this urn rather than coffee bags, which are unsightly and unsanitary.

Another widely used urn for serving milk and cream is widely known and has been favorably passed upon by the National Board of Health. These urns are thoroughly insulated and are provided with an ice chamber which keeps the ice from direct contact with the liquid and at the same time maintains a low temperature for several hours. These urns have a floating tube attached to the faucet in such a way that there is an even distribution of cream through the milk. The one in the display kitchen has a capacity of twenty quarts of milk and ten quarts of cream. It is placed next to the coffee urn for the sake of convenience.

A slicer is included in this equipment. This machine is a valuable addition to any kitchen not only because it is a labor saver but because it is a money saver as well. The meat which is cut with the machine is all of a uniform size and is more attractive. Also more



slices are cut from each pound of meat, effecting considerable saving in the course of a year. The machine is used for cutting all sorts of things as well as for meat. It makes very fine cold slaw, and may be used for bread slicing as well, although it is not designed as a bread slicer.

#### Food Conveyor Instead of Steam Table

While it is planned to serve all patients from the main kitchen some provision must be made for serving the employees and nurses. It is planned that the nurses will be served directly from the range, in family style, and that employees will have a dining room at some little distance from the kitchen. For that reason we are obliged to devise some way of transferring the food to that dining room and keeping it hot in a sanitary manner. A well-known food conveyor, such as is used in sending food to floor kitchens has been selected as answering this purpose satisfactorily. The conveyor takes the place of a steam table and does away with noisy and sloppy carting of food. Model 5-A of this conveyor has insulated wells for either hot or cold food and also non-insulated compartments for carrying bread, butter, etc.

There is one point I should like to emphasize in conclusion, and that is the importance of selecting equipment which is standard with the manufacturer. Anything that is specially made is inevitably more expensive to build than pieces made up in quantity under the most favorable conditions. Slight variations in size or construction are consequently higher in price and should be avoided whenever possible. There are times when it is absolutely necessary to have something made up to fill some special need but this should be the exception rather than the rule, unless we can afford to altogether ignore the question of expense.

#### PHILADELPHIA DIETITIANS HEAR TALK ON INSULIN TREATMENT

The Philadelphia Dietetic Association was fortunate in having Dr. Orlando H. Petty as speaker at its January meeting, which was held in the new Jefferson Hospital. Doctor Petty, who is especially well known for his work in the treatment of diabetes, spoke to the eighty members present on the importance of diet in metabolic diseases.

He reviewed briefly the rapid growth of special diet work since its first use in obesity, touching upon the salt-free and ketogenic diets, and the importance of the vitamine requirement. At the present time, much interest is centered upon the diet in diabetes, which is a condition in which the pancreas fails to secrete insulin in the proper amounts. Since the discovery and commercial preparation of insulin, the dietitians' part in diabetic treatment is not lessened, but rather increased. While it is true that especial care is necessary in all diabetic diets, it is imperative in cases where insulin treatment is being given, that the patient receive the amount of carbohydrate needed to prevent insulin shock. It is the duty of the dietitian to plan the patient's diet, and if food is returned on the tray, to compute the food value and see that the patient receives an equivalent immediately.

In connection with this phase of the dietitian's work, Doctor Petty believes that her importance lies not so much in actually preparing the food (although she should, of course, be able to do so), as in supervising and checking upon the patients' diets, and in cooperating with the doctor in charge in providing the dietary elements necessary for successful treatment of the disease.

At the close of Doctor Petty's talk, a short business meeting was held, and the members then divided into

groups and shown through the kitchens of the new Jefferson Hospital.

#### NEW YORK DIETITIANS MEET

About forty members were present at the monthly meeting of the New York Association of Dietitians was held January 26, at the American Red Cross Teaching Center, Ninth Street and Fifth Avenue. The meeting was in charge of Miss Wells.

Mrs. Agnes O'Dea of Fifth Avenue Hospital spoke on her methods of purchasing. Miss Fanny Sicher gave an interesting account of her work as consulting dietitian, showing what a varied field there is for this branch of the profession. Miss Estelle Barker, Flower Hospital, discussed the requirements for admission to the association, and it was decided that a two-year course in a recognized school of home economics should be the minimum requirement. The registering of dietitians, and affiliation with the American Dietetic Association were also discussed.

Miss Halloway of Pratt Institute discussed the topic "Is the Hospital the place for Apprenticeship for Student Dietitians?"

The subjects offered interesting material for the discussion which followed.

#### THE DOCTOR AND THE DIETITIAN

"The present-day attitude in some hospitals is that the dietary department is something of a cross between a quick-lunch counter with automat tendencies and an exclusive and always efficient hotel kitchen. It is expected to descend from the dietetically sublime to the gastronomically ridiculous on shortest notice—to know always how many calories an onion or a frankfurter possesses, and in odd, unoccupied moments to plan a luncheon for the superintendent's wife, or the ladies' aid society."

"Again, to many the function of the dietetic department is to furnish food, sufficiently nourishing to keep the ward patient from starvation during his hospital stay, and of such an appetizing nature as to prevent the private-room guest from addressing complaints to the board of trustees."

"This department is not always regarded by the physician in the light of a specialty division, whose work is to fill prescriptions carefully planned by himself, and often difficult to prepare, and always of vital importance to the patients."

\* \* \* \*

"The modern dietitian wants an opportunity to use her knowledge of food percentages, calories, grams, etc., rather than, from the most out-of-the-way place in the hospital, simply to fill orders in the same fashion as the clerk behind the restaurant counter. The respect for her profession will not be enhanced by a crowded and unsanitary kitchen, office or classroom—a place not needed by any other hospital activity. Nor do I think that the food expert should be required to remain away from the corridors and room and wards of the hospital proper. The dietitian of today is interested, or should be, in the urine chart and the blood-sugar tables of the diabetic patient, and such interest should be encouraged by the physician. If I could paint a verbal picture of the patient, with his bed surrounded by the physician and his aides, I certainly should not deny the desirability, from the patient's standpoint, of the food expert being numbered among the others."—Dr. Joseph C. Doane, Philadelphia General Hospital, Philadelphia, Pa.

A friend is most a friend of whom the best remains to learn.—*Selected.*



## DISPENSARIES AND OUT-PATIENT DEPARTMENTS

Conducted by MICHAEL M. DAVIS, JR., Ph.D., Executive Secretary, Committee on Dispensary Development, United Hospital Fund of New York, 15 W. 43rd Street, New York  
and by ALEC N. THOMSON, M.D., Medical Secretary, Committee on Dispensary Development, United Hospital Fund of New York, 370 Seventh Avenue, New York

### ADMISSION SYSTEM FOR DISPENSARIES: PART II\*

By JOHN R. HOWARD, JR., SUPERINTENDENT, NEW YORK NURSERY AND CHILD'S HOSPITAL, AND JANET M. GEISTER, R.N., NEW YORK, N. Y.

**F**OLLOWING the admission of the individual as a dispensary patient there arises the question of assigning him to the clinic indicated by his needs.

Medical distribution as it occurs at the admitting desk presents a number of problems:

1. The patient obviously a medical case, destined for one of the sub-departments of medicine;
2. The patient obviously a case for one of the specialties, such as orthopedics;
3. The patient with diagnosis or partial diagnosis already made referred to a special clinic by another clinic within the dispensary, or by another dispensary, or by an outside physician;
4. The patient whose symptoms do not immediately indicate to what clinic he should be assigned;
5. The child under fourteen, with special reference to the detection of contagion.

#### Recommendations of Medical Section Committee

The committee of the medical section, in stating its opinion on the matter of the first three problems, and also in reply to a query from the committee on admissions, makes the following recommendations: "All patients who, on their own complaint, indicate a need for treatment in the medical sub-departments should go through general medicine." Neurology is also included in this group "unless there is an internist on active duty on dispensary days in direct connection with the department of neurology."

*In regard to syphilis this committee recommends that:* "All cases obviously venereal or with skin manifestations should be referred direct to syphilis or dermatology and should be referred to the medical clinic for examination at stated intervals, unless there is an internist directly connected with such department."

*In regard to the specialties other than medicine, this committee recommends that:* "All cases obviously belonging to the specialties other than medicine be referred directly to the specialties." (For more detailed statement of this, see report of the committee on the place of the medical clinic, of the medical section.)

In regard to patients already diagnosed, referred by other physicians, this same committee states: "It is agreed that patients referred for examination or treatment to special clinics within the dispensary, by outside physicians, other dispensary, another clinic within the dispensary or

hospital ward, be sent directly to the service indicated in the reference; but the committee deprecates the reference of such patients to individual physicians."

The opinion of the pediatric section on the question of the detection of contagion in children is contained in its "Standards for Out-Patient Service in Pediatrics," which states: "A competent assistant, preferably a paid one, whose chief duty should be the segregation and isolation of contagious cases, should be present during all clinic hours."

The committee on admissions agrees with the views of the medical section and the pediatric section.

The committee recommends:

That all patients apparently belonging to the special clinics, other than the sub-departments of medicine, be referred to such clinics.

That all other patients be referred to general medicine.

That all patients under fourteen be sent to the pediatric clinic and that a competent physician be assigned to the clinic to detect and isolate contagious cases.

The question of how medical distribution shall occur, whether by a lay registrar, an admitting physician who sees all new cases, or through general medical (or diagnostic) clinic, was submitted to the committee of the medical section. The reply stated that: "The committee is of the opinion that it does not consider the admitting physician an absolute essential to effective admissions' work. It is desirable at least to have as admitting officer a fully trained nurse with social service training, or a trained social worker with medical experience."

The committee on admissions concurs in the opinion that the services of a person experienced in social work should be utilized in completing the admission of a patient, but it believes that this is not necessarily the responsibility of the admitting officer.

Experience in social work is too specialized to require the admitting officer to be a trained social worker, since so little of her attention is concerned with social problems.

Furthermore, the very general nature of the medical question to be determined at the admitting desk (namely, whether the patient is to be sent to a special clinic or to general medicine) seems to make it unnecessary for her to have a nurse's training. If without social or nurse's training, however, the registrar should be a person unusually intelligent, capable of recognizing the necessity for, and of profiting by, coaching in both social and medical placement. In addition, she should be a trained and experienced clerical worker, capable—in the small dispensary—of assuming all the admitting functions, and—in the

\*Second half of report of committee on admissions of the Associated Out-patient Clinics. The first half of the report appeared in the February issue of the magazine.

large dispensary—of directing a complex, swiftly moving business. Beyond all this, she should have those human characteristics which make it possible for an individual to receive and question a large number of patients daily, year in and year out, without losing the friendly attitude which should be the basis of any admitting system.

After medical needs have been determined, it must be decided whether the individual can afford private treatment. The only person capable of determining finally who should be referred to a private physician is the experienced social worker, or the dispensary executive in consultation with the social service department. Experience indicates that 98 per cent of those applying will not be able to pay for private services, so that, quantitatively, this problem is a small one. In this connection it may be pointed out that it is useful to have one social worker assigned to the admitting process. Where there is not a social worker in each clinic, the social worker connected with the admitting process can be of great value in taking the original social histories.

In the dispensary that has a social worker neither in the individual clinics nor in the admitting unit, these questionable cases should be referred to the social service department, or to the dispensary executive.

No standards can be defined to govern the application of medical needs to the patient's budget for all dispensaries; nor, in the opinion of this committee, can such standards be set up for all cases in any one dispensary. Rather, is it a matter for a skilled social diagnostician to settle on the merits of each individual patient.

Where such a broad and complete plan for determining economic eligibility has been worked out, it should be fully explained to the dispensary physicians so they will understand and cooperate. When an individual physician gets the impression that a patient has been admitted who can afford private treatment, it should be made easy to refer such a case for further investigation.

The committee recommends:

That tentative medical placement and economic eligibility be determined by the admitting officer.

That the final decision regarding admission of doubtful cases, based on a consideration of medical needs as related to economic status, be made by a representative of the social service department, or by the dispensary executive in consultation with the social service department.

That the admitting officer should be a person of high calibre capable, in the small dispensary, of assuming all the admitting functions, and, in the large dispensary, of directing a complex, swiftly moving business.

That in dispensaries where the final economic eligibility is determined by the registrar, she must have training in social work as well as business; but that where the final economic eligibility is referred to a social worker, the registrar need have only that social background and coaching which will enable her to make the original tentative admission, just as medical coaching enables her to make the tentative medical placement.

That cases which appear to the physician to be questionable from the economic standpoint be referred to the social service department for further investigation.

#### IV. IDENTIFICATION ITEMS TAKEN FOR INDEX CARD

#### V. IDENTIFICATION ITEMS "CLEARED" WITH ALPHABETICAL INDEX

#### VI. IDENTIFYING AND OTHER NON-MEDICAL ITEMS TAKEN FOR HISTORY SHEET\*

#### VIII. GIVEN ADMISSION CARD

In the ideal admission system all clerical processes are executed with a minimum of effort and a maximum of

accuracy. In order to bring this about these four steps must be considered in their relation to each other as well as in their relation to the whole system.

The two main objectives in registration are: positive identification and accurate statistics. As the latter subject is treated by the committee on records, this committee is concerned only with the former, identification. Identification includes registering certain minimum items regarding each patient, and includes checking this data with the alphabetical index to learn if the patient has been registered before. A new patient's name needs to be written at least three times: on the alphabetical index card, on his admission card, and on his history sheet. If this is done at two or three different points there is an opportunity for two or three versions of the name.

Furthermore, because of the additional time spent in questioning and writing, it needlessly delays progress.

#### Routine of Identification

It is advisable, both from the psychological and administrative viewpoint, for the first worker who interviews the patient to obtain the identifying facts. The medical and economic classification of the patient made by the admitting officer should also be recorded. The officer may do this either on the patient's history, or on a slip provided for that purpose.

Once the identifying data have been obtained, the recorded information should be so routed as to make the repetition of these questions unnecessary. From the one record a clerk or typist can rapidly make out the other necessary forms, index card, admission card, and so forth, and obtain any other routine information that is necessary. This routine information may include such items as "part of house," "birthplace," etc.

#### Index Card

With an efficient alphabetical index card file, in charge of one person, the automatic checking of all new patients against the file to insure against duplication in registration can be done quickly and accurately. At present, the majority of institutions do not automatically "clear" their patients during admissions but find their duplications when filing the index cards, usually after, instead of before, clinic. This indicates that the importance of clearing new patients is not generally understood, though duplicate registration is a frequent occurrence. One institution reported that out of every fifty applicants five were found to be duplicates. Identifying the applicant as a former patient is of special value in saving the time and directing the effort of the physician. For suggestions regarding types of systems that will expedite clearing see the report of the committee on records, "Principles and Forms for Out-Patient Records."

The committee on admissions did not take up the question of what items should be considered in identifying the patient, or the form of his admission card. These matters were studied by the committee on records and the recommendations are to be found in the printed report of that committee.

#### Recommendations of Committee

The committee on admissions recommends:

That in the organization of an admissions unit the work be so apportioned that all clerical processes involved in admitting be concentrated in order to minimize questioning and travel and to insure accuracy.

That all new patients be checked against the alphabetical index file to insure against duplicate registration.

\*Step VII. Determination of Social-Economic Eligibility was discussed in the first half of the report, which appeared in the February issue.



That the forms used contain the minimum items recommended by the committee on records.

### IX. PAYS ADMISSION FEE

Theoretically, or actually, the new patient at this point joins the line of revisit patients before the cashier's window. In the small institution, where one worker admits both new and old patients, there is, of course, no division of clients; all patients are in the same line. In the larger dispensary, however, where such a division is possible, the payment of fees is the first step after entrance to the dispensary which is shared in common by both new and revisit cases.

The revisit patient's procedure is simple: he passes from the entrance to the cashier, exhibits his admission card, pays his fee, receives his clinic ticket, and passes on to await his turn in the clinic. In municipal institutions he pays no fee; otherwise the procedure is similar.

#### Businesslike Methods of Collecting

A dispensary that charges fees is in a measure engaged in a business transaction and should be conducted along business lines with businesslike methods of collecting and accounting. Both administratively and from the viewpoint of facilitating the patient's travel, the collection of fees is best accomplished at one place. For a patient to pay admission fees in one place, treatment fees at another, and prescription or x-ray fees at still another, not only adds to his confusion and to confusion in the traffic lanes, but it decreases the chance for accurate accounting. The value of a cash register at one point is nullified if at one or more other points change is made from a shoe box or a desk drawer cluttered up with personal effects.

Business methods in the collection of fees facilitates accounting, aids in the accurate compilation of statistics, and has an excellent psychological effect on the patient. This again points to the importance of so organizing the admissions unit that no duplication in processes occurs, responsibility for each type of operation being focused at one point.

#### Lost Admission Cards

The question of lost or forgotten admission cards is one that comes up at this point. It is a problem that perplexes every dispensary. It is costly not only in actual material but in the labor that is required to look up the patient's index card and to make out a new card. Various disciplinary methods are practiced. A fee may be charged for a new card; patients may be required to wait until all patients are admitted before they are looked up; and sometimes persistent offenders are sent home to get their cards. The charge for a new card appears to have the most salutary effect of all the methods.

The committee recommends:

That all dispensary fees be paid at one place.

That business methods for checking accounts be instituted.

That a cash register be used where the amount of business is sufficient to make this practicable.

That a fine (fee) be imposed on the person who comes without his card. It is suggested that the penalty be more than the cost of the card in order that readmission costs be met.

### X. GIVEN CLINIC TICKET

Practically all dispensaries issue a ticket or receipt in some form to indicate that the patient has been admitted. The ticket is sometimes colored according to clinic, or the

department number or name is entered upon it. It serves three purposes: (1) Guides the patient to his proper department; (2) carries his sequence number; (3) indicates that he is entitled to treatment.

The committee makes no special recommendation in regard to the clinic ticket.

### XI. SENT TO CLINIC WAITING ROOM

The patient, though officially admitted to the dispensary, is in the admission process until he passes to the doctor in the clinic room. The local waiting-room problem is closely allied to the problem of the general waiting room. A special study was made of a number of representative institutions to learn the proportion of seats which should be provided for patients, not only those awaiting treatment after admission but also those awaiting admission to the dispensary.

It is apparent that no average situation can be found; the situation as presented by one institution does not apply to another. This is true even within a given institution; the intake of patients varies considerably according to the type of clinic and also according to the day of the week. Saturday afternoon clinics, for instance, may bring in a group which is larger than the group on any other day.

#### Seating Problem

It is also found that certain clinics are popular with the patients and become overcrowded, while other clinics in the same dispensary are much smaller. The executives interviewed in regard to the seating problem were quite generally of the opinion that their seating facilities were adequate for the number of people handled, but that certain factors, difficult to control, enter into the problem, as, for example:

1. A large number of relatives and friends accompany patients to the dispensaries. This varies, of course, with the nationality group, and also with the type of clinics. The effort to control this has not been very successful, and, under some circumstances, it cannot be controlled.

2. Mothers coming for treatment are obliged to bring with them their small children.

3. Children attending clinics must be accompanied by adults.

4. Certain clinics require more waiting room than others. Orthopedics, for instance, needs to provide space for the crippled child. Clinics with a quick turnover require less space than those with a slow turnover.

5. Regardless of how many seats are available when the clinic session opens, patients will crowd about the clinic door. Where the patients are not called by number or name, this is unavoidable, but in the majority of instances, the patients enter in sequence.

While the actual number of seats available in the dispensary may be adequate, unintelligent use of them and poor management brings overcrowding. Important and popular clinics held at the same hour and in the same part of the building bring about congestion in this locality while at the other end of the building there may be a large number of vacant seats. Administrative machinery operating clumsily, or tardy physicians, may be responsible for slow turnover which keeps the benches in use for a longer time. Failure to supervise the waiting rooms, to maintain order, to spread the load, and to direct sequence contributes materially to the inefficient use of seating facilities.

A well-regulated, thoughtfully planned waiting room in which there exists a spirit of quiet confidence, brings the



patient before the physician in a state of mind advantageous to both physician and patient.

### Waiting Rooms

The general waiting room as distinguished from the local waiting rooms appears to be needed in all types of dispensaries. It is utilized before the admission desk opens and where the patients are called by number. It often serves the pharmacy patients, those waiting for special treatments, social service, hospital admission, relatives and friends of patients, lost card patients, and so forth.

Experience indicates that 25 per cent of the load is present at the clinic opening hour, but where all the departments of the dispensary function evenly the rapid turnover results in an actual waiting group of 10 to 15 per cent.

Patients arriving before the registration window is open should be seated—these seats to be utilized later as waiting benches for new patients and patients waiting for prescriptions, interviews, and so forth.

Revisit patients need little consideration in the general waiting room, for where the admission process is well organized there is no waiting.

Local waiting rooms are advantageous in that they distribute the crowds according to the clinics. They also bring the patients closer to the physicians, saving the time of both. One slow-moving clinic does not congest the waiting room of a faster clinic.

The disadvantage of local waiting rooms is that a popular clinic may have groups of patients standing about, while seats in other waiting rooms are vacant; also, if the local clinic is isolated, supervision of it is more difficult.

Apparently, the best type of local waiting room is not the small isolated room, but rather local space in a large open room. This allows for spreading the overflow from one clinic into the space of another, and facilitates admissions and general administrative procedure.

The committee agrees that no arbitrary ratio regarding the number of seats that should be available for the expected load of patients can be predetermined; the percentage of new cases and the type of clinic determine the need for seats. The best way for a dispensary to determine the size and facilities of its waiting-room space is to make a study of its individual needs. The dispensary, especially the new one, must bear in mind the need for providing for growth.

The committee recommends:

That the dispensary desiring to determine its need for waiting space and seats make a study of its individual requirements.

That a simple method of studying these needs be worked out by the Associated Out-Patient Clinics, this to be available for any dispensary desiring to make such a study.

That for the general waiting room provision be made for from 10 to 15 per cent of the patients expected.

That for local waiting rooms seats should be provided for both old and new patients, from one-half to two-thirds of the expected group, and that the most efficient arrangement is one large room with sections set apart for each clinic.

## XII. CALLED INTO CLINIC

The practice of calling the patient into the clinic room in the order of his admission is so generally accepted that it needs no discussion. It may be pointed out, however, that here, as at the entrance, the patient too sick or frail to wait should be watched for and given precedence.

### Division of Work

It is not possible to complete a discussion of the problems of admissions without considering the divisions into

which the work naturally falls. There are two problems involved in the successful execution of an admission system: first, it is essential to analyze the tasks involved, and second, so to assign the tasks that there will be no duplication in processes, and no waste motion.

The committee recommends:

That where more than one person is engaged in the admitting process an admitting unit be created with one individual directly responsible for all the activities of admitting. This person is the admitting officer and may (in the smaller dispensary) properly include the record room under her supervision. Where two persons are engaged in the admitting unit, the first separation of functions is to place in the hands of one all money transactions. This person would logically include in her activities the admission of old patients, and leave the other to give her individual attention to the more involved problems of the new patients. Where more than two workers are necessary, the division of work depends on local needs.

That where an admitting unit is created, the processes involved be analyzed and the work so allocated that no duplication in processes need occur; and that each worker be chosen in accordance with the most important part of her task, rather than the least important part of it.

### Limitation of Numbers

It is not possible to leave the subject of admission systems without referring to possibilities in the limitation of patients. This is already done in a number of dispensaries; in some places by limitation of new patients, and in some by an appointment system. This whole subject is too new in thought and in practice to make definite recommendation at this time; but it may be pointed out that however successful a dispensary may be in working out its admission and treatment problems, no dispensary should admit for treatment more patients than can be properly examined and thoroughly treated. The problem of limitation of numbers is not only one of admissions but involves all the departments of the dispensary. In order to bring into the discussion all of the groups concerned, it should be considered jointly by representatives of all departments.

The committee endorses the principle of the limitation of the number of patients, and recommends that the method be referred for discussion to a committee representing all of the departments concerned with the problem.

### Conclusion

In submitting this report the committee again calls attention to the fact that the order in which the various admission steps have been arranged should not be considered as an arbitrary pattern. The effort has been to point out the steps in the patient's itinerary and to discuss the various problems connected with this travel.

It is not possible to write into general recommendations suggestions for meeting situations peculiar to any special type of dispensary. The committee has endeavored to make its suggestions as practical as possible, at the same time keeping them flexible enough for general application.

It is the opinion of the committee that where errors exist in the system of admitting patients, these are due not to indifference but to a number of other factors. Pressure of work, lack of funds, limited floor space, clinic sessions too concentrated, are all contributing factors. But these handicaps may always be mitigated, and sometimes done away with by a proper analysis of the problem and the application of tried principles. While the initial expenditure in time, thought, and money may be larger than

(Continued on page 284)

## OCCUPATIONAL THERAPY AND REHABILITATION

Conducted by LOUIS J. HAAS, Director of Men's Therapeutic Occupations, Bloomingdale Hospital, White Plains, N. Y., and  
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## CULTIVATING WILLOW FOR OCCUPATIONAL THERAPY WORK\*

By LILLIE M. HARROWER, OCCUPATIONAL THERAPIST, CHICAGO STATE HOSPITAL, CHICAGO, ILL.

A FIELD of willow is called a willow holt. Many willow holt are started in this country but are short lived because they soon become full of weeds and do not produce good willow rods.

To start a holt, select a spot of ground that has a good sandy, loamy soil that will remain moist, not wet, during the year. It is well to plow this field very deeply the fall previous to planting cuttings so that the weed seeds may be covered deeply and destroyed.

While it is recommended to prepare cuttings only a few days before planting, yet where this is not practicable they may be cut at any time after December 15, and then heeled in moist sand in a cold barn where they will be protected from extreme dryness or moisture. The cuttings should be of an equal length for a given soil and site. In moderately moist porous soil they should be from eight to ten inches in length but where the water level is below six feet they should be twelve inches long. Planting is done in early spring as soon as the frost is out of the ground. The cuttings should be pushed vertically into the ground to within one inch of the top.

If cultivation is done with horses then rows should be about three feet apart and the space between cuttings twelve inches. Close planting is done to prevent the rods from becoming curved at the base. They should grow into straight, strong, lithe rods.

The first two years of care are the hardest. After that time the willows should be so thick that they shade the ground too much for weeds to do well.

Willow cuttings must be hoed closely and weeds pulled out at least three times the first season. Even with horse cultivation there remains much for the man with the hoe to do if the cuttings are to be given a good start. Ours were well cared for and we are reaping the benefits.

### When to Cut Willows

It depends upon method of peeling as to when the willows should be cut. If they are to be peeled by hand they may be cut when the sap has begun to rise and only as many cut each day as can be peeled, although they may be peeled fairly well next day if placed in water over night.

If artificial forcing is done willows must be cut early so they will have time to sprout—usually sometimes be-

tween January and April before the sap begins to rise. After cutting they are placed in vats of soil about six inches deep supplied with running water at one end and a run-off at the other so that the soil cannot turn sour or the water become stagnant.

By nature basket willow plants require at least six weeks to rest. Some holt last at least twenty-five years. It is claimed by experts that the profitable life of a field may be increased by allowing the willow now and then to grow for two years without cutting.

Willows should be cut with a sharp short hooked knife close to the roots and in a clean manner so as not to split root or rod. Too low cutting will destroy the roots and too high cutting is not advisable, as they will bud from the side and form crooked rods.

### How Willows Are Sorted

Willows are sorted according to length and also for thickness. This can all be done by hand at the time of peeling or may be done before peeling—if done before they are easier to peel. Some sort into four lengths. A bundle is put into a barrel which has A, B, and C marked at different lengths. All rods below C size are put into a bundle, all between C and B into another and those between B and A into a third and all above A in the fourth group. This is done before peeling.

A commercial basket maker, if given a large bundle of willow enough for a hamper, will sit down and putting the bundle between his knees with butt ends on the floor, grab tops and pull out a handful and lay them on floor, readjust willows, grasp tops again and pull out again. These he lays crosswise of the first bunch and sorts this way again and again until he has the shortest willows on top. The bottoms of the baskets are usually smaller around than the tops and in this way he makes a better basket and uses up all the willows in the bundle.

### Kinds of Willow

Basket willows are of European origin and are now cultivated in all temperate climates. About ninety-five different strains considered valuable commercially are known in Europe.

In the United States, American green and Welsh varieties are most favored. The Welsh is a long thin-leaf variety of purplish hue, and it is well to combine it with the American green which has a broad leaf which

\*The writer is indebted to the *Craftsman* and the *Scientific American*, for some of the facts on willow.



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helps shade the soil. The Welsh rods are used for fancy baskets and if used with bark will outlast any variety. The American green is used for furniture, hampers, clothes baskets etc., where strength is needed. If sap-peeled, the rods are white, if steam-peeled, the rods are buff and if the bark has been left on they are brown. We made some baskets with the bark on but did not care for them. Possibly if we made some now they would be better made and we might like them.

The agriculture department at Arlington, Va., has done much to help encourage the raising of willow. This department will send out cuttings and tell how to care for and market them. Manufacturers are glad to get sap peeled willow because the color is preferable to steamed rods, which are buff in color, as they are stained with tannic acid from the bark.

### Willow at Chicago State Hospital

We have one and one-half acres of willow. The 10,000 cuttings were purchased from a nearby nursery, some years ago and nearly all of them grew and are now supplying work for a number of patients. All the articles made are used in the institution. When peeling time arrives occupation is given to some two hundred of the less mentally alert groups of patients for about six weeks each spring. Patients who will do nothing else can often be persuaded to strip willows when they see many others similarly employed. The sap must be rising before the bark is easily stripped off.

The willows are cut on the morning in which they are to be peeled and carried in bundles to the rooms where groups of workers are gathered to do the work. Usually the stripping is done entirely by hand but sometimes a knife is used to start the bark from the butt ends. This may be done by some reliable worker and then pass the rods on to those who have poor finger nails. Many patients peel only when a rod is placed in their hands and it may take several days before they can be taught to pick up and peel by themselves.

As the rods are usually dropped when finished someone must be trained to gather and sort them into bundles.

It is well to have a space on the floor where at least four different bundles can be laid. Into these groups willows are dropped according to thickness. A larger number of bundles would take better care of the various lengths but this is not so important as the size.

Do not make the bundles too large before they are tied up, as they must be thoroughly dried before being stored away or they will have brown spots (rot) all over them, which mars their appearance.

Tie bundles with old rags, string or willows. Do not use the strippings, as they leave bundles too loosely tied when dry.

### How Willow Should Be Stored

Never leave newly peeled willow out of doors if there is danger of dew or rain. Do not stack together when green. A few days of sun cures the willow sufficiently to be stored away or it may be spread out in a warm room until dry. Store willows by laying lengthwise on the floor; if stood up on end there is a tendency to curve at the bottom which makes them harder to use in weaving.

Patients who have become interested in willow peeling may be lead on to try basket weaving or some other occupational work in the class rooms.

Basket weaving with willow is not so easy as with reed because of the variations in length, thickness and pliability, but when one becomes used to the work it does not seem so difficult.

Cutting and round nose plyers, jack knife, awl, hammer and nails are necessary tools. A large vat where willows may be soaked is very necessary.

### Weaving

A few general directions may help the beginner. The easiest basket to make is a wastebasket with a wooden base. The heavy ends of fruit boxes make a ten-inch circular base. With a one-quarter-inch drill place holes one-fourth inch from edge of base and one inch apart.

For the spokes of the basket use willows of even length and thickness. There is a slight curve in most willows. Be sure that this curve is outward when the spokes are put into the holes in the base with butt ends down. Nail these spokes into the base from outer edge of base.

Begin the weaving with triple weave. Choose six willows of even length and thickness about three feet long. Take three of them and with the fine ends start by putting an end of one, anywhere on the base between two upright spokes. Take another fine end and place it in first space to right, then the third fine end is placed in second space to right of initial space. Now with the three willows, one in each of three consecutive spaces, pick up the left hand weaver with the right hand (the left is holding down ends of willows behind spokes) and bring forward in front of two upright spokes and back of one spoke and out again, thus making first weaver the third one. Continue to take left hand weaver, bring forward in front of two and back of one until weavers are used up. We now are working with the large ends of the weavers. To continue weaving take the three remaining willows left from the six chosen and start with the butt ends. With a sharp knife cut the ends of previous butts and the new butts with a long slanting cut so that the ends fit well together. Take one of the new weavers and push the butt end between the butt end of previous left hand weaver and spoke at right against which it rests, then weave in front of two and back of one as usual. Take second new weaver and proceed as with first just used. Do the same with third. Weave these three new weavers to the end. You will notice we start with fine ends, piece with the large ends and stop with fine ends. If more triple weaving is desired, use six more weavers and proceed as before.

There are two weaves largely used in willow basketry—the spiral and straight. The spiral is used for hampers, etc. As it is the favored method used, we will describe it. Take a willow long enough to go once around the basket. Start with the butt end and place behind a spoke with the butt end on the outside. Now use single weave, in front of one spoke and back of next one. Do this until you come to the beginning of the weaver.

Take a second weaver, place the butt end one to the left of the previous weaver and weave to the end of the row. In making spiral weave begin one space to the left and end one space to the left with each rod. This makes the work look uneven at first but will even up itself in time. If you do not want to weave so much then just fill out the uneven side with a few short pieces of willows woven where the uneven place is.

Put triple on top of spiral weave if you wish strength and beauty in the basket.

The border may be made in several ways. A good substantial one is made by bringing one upstanding spoke down behind the next two right hand spokes and out between the second and third upstanding spokes. Again, take the right hand upstanding spoke and bring down back of two and out in front.

Do this until four spokes are lying down in four sep-

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arate spaces. Do not pull these spokes down snugly but leave very loose. A large piece of willow can be used to keep each one from being drawn down snugly.

Now grasp the left hand down spoke, bring forward in front of three spokes and back of one. Take the left upstanding spoke and bring down back of two and out beside the down spoke previously woven. Again take the left hand down spoke, bring in front of three and back of one. When counting these three spokes be careful not to miss the first spoke which is close to the weaver.

In finishing the border be careful to place the last four uprights in their proper places.

Willow work is not so attractive as some other forms of occupation on account of the stiffness of the rods and of having the hands in water so much, but as one grows more familiar with the work the rods seem to lose much of their stiffness and the work becomes more interesting.

One patient varies his work by weaving rows of triple weave in his spiral, another has found enjoyment in working on several baskets at the same time. He began with one and completed that, then he started four and finished them (making the four in about the time he usually did one); next he made nine and now is working on five. These are our farm fruit baskets and he has been very busy where previously he would sit for long periods in idleness.

Only seven men are at work on willow in our pre-industrial room. At present one is making clothes baskets which are to be used by the wards in carrying weekly supplies from our store to the wards, another man is working on clothes hampers for the wards, another on waste baskets for the various departments in the institution, and one, on vegetable baskets.

Each man is taught to make the various kinds of baskets but it so happens that these men seem to like certain kinds and do them well.

We also make hanging baskets for potted plants and window boxes for holding three small flower pots, medicine baskets for carrying medicines from the drug store to the wards. A very few trays, jardinières, and flower baskets complete the kinds of willow baskets which are pretty generally being made.

It is pleasing to note the improvements in the appearance and number of baskets turned out. There is a satisfaction also in seeing these baskets used on the wards and around the grounds.

Why not grow more willow on state hospital grounds and have material for much occupational and diversional therapy? Even though actual weaving may become largely industrial it can be used as a good problem for many patients, especially men who like to do something that appeals to them as being worth while.

Mr. Edward F. Worst of the Chicago public schools has some excellent directions and illustrations on willow basketry. The U. S. government has a Farmers' Bulletin No. 622 that may be had for the writing.

## ADMISSION SYSTEM FOR DISPENSARIES

(Continued from page 279)

at present, it will be found that the time saved in other parts of the dispensary and the resultant increase in efficiency will more than repay the cost. The value of a well-organized admitting system should be measured not in terms of money, but in that for which dispensaries exist, namely, service to patients.

The interest of dispensary executives in this admissions study, and their cordial cooperation in its prosecution, to-

gether with their evident readiness for constructive, practical suggestions, reflect their general desire to give to the community the best possible services with the resources at their command.

## NURSING SCHOOLS TO BE GRADED

Nursing schools throughout the United States are to be graded according to definite standards worked out by the National League of Nursing Education and approved by all national nursing organizations. This was the plan announced at the fifth annual meeting of the Central Council for Nursing Education, held in Chicago, Ill., January 26, 1925. It is anticipated that the expenses of the work will run to \$30,000 the first year, \$40,000 the second year, and will probably reach a \$50,000 figure the third year. No school is to be forced to meet the standards of the league, but each school is to be allowed to ask the opportunity to be graded, and the work will proceed as fast as possible.

The chief feature of the program was the address of Mrs. Chester C. Bolton, Cleveland, O., on a sympathetic layman's reflections upon nursing education. "What are we trying to do, especially laymen, in regard to nursing education?" she asked. "Selfishly, we want better nursing. Back of this is the idealistic feeling that nursing is really a holy calling, but we have nevertheless been satisfied with methods of education that place too great emphasis upon external technical knowledge. Minds trained to think, not minds filled with formulae, should be the objective."

A step in the right direction is the requirement of high school graduation in candidates for nursing training. This assures the mental ability to learn from books. Better still, it implies certain capacities for feeling that are undeveloped in immature or mentally inferior persons. For these reasons it is best to take candidates for nursing education as late as we can, but not too late, for the need is great and far too few students in nursing are affiliated with Grade A schools.

Of the living and working conditions of the student nurse, Mrs. Bolton declared that a great responsibility attaches to hospital and lay groups alike that such standards shall be maintained in living quarters of nurses and such refinements and excellencies of food services and the like shall be maintained as will train the untrained, and will relieve the student nurse from untoward effects of too sudden and too unrelieved contact with the bare, cold, unadorned facts of disease. The hospital trustees should protect the callow nurse against the searing effect of contacts with men who may be good teachers of clinical facts, but who are indifferent to refinement.

Difficulties of salaries, difficulties to be anticipated through lack of administrative heads for the Grade A schools the council hopes to develop, possibilities of broadening the institutional outlook by opportunities for superintendents and supervisors to live outside the institution, the ill results of false economies in equipment, all were sympathetically discussed. Mrs. Bolton was emphatically in favor of a system which supplemented adequately the work of student nurses through the employment by the hospital of graduate nurses, both groups to be carefully supervised; for it cannot be assumed that the graduate nurse will fit into the hospital personnel without such supervision. And in possible economies, her word of warning was to beware of listing as economies only such reductions as give the patient the little end of the horn. Efficacy of service and not the common denominator of cash is the true criterion.





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## ENTHUSIASM IN OCCUPATIONAL THERAPY

BY BESS SUTTON, STATE ADVISOR IN OCCUPATIONAL THERAPY, SPRINGFIELD, ILL.

**I**N AN occupational therapy department, there are many complex and peculiar problems to be solved, many unpleasant and difficult tasks to be performed; consequently, an occupational therapist must be imbued with a higher desire than to earn a livelihood or just to do one's simple duty. There must be a willingness to make personal sacrifices in order to alleviate the suffering of less fortunate human beings. Service is, or should be, one of the stellar ideals of occupational therapy.

Just how an occupational therapist can render the best service depends upon conditions in the hospital in which the aide is engaged and is to be determined by the worker; but if this service is rendered intelligently, understandingly and sympathetically, success is bound to follow. "If a man preach a better sermon, print a better book, or build a better mouse trap than his neighbor, even though he live in the woods, the world will make a beaten path to his door." This path does not always lead to personal glory, but every success of an occupational therapist helps to make a more defined path leading to the furtherance of the work and to a belief in it as a remedial measure.

One needs to be enthusiastic, cheerful, courageous and optimistic, for our mental states affect our thoughts and actions and these in turn react upon the people with whom we come in contact.

Not only must an occupational therapist start the patient to work, but the aide must be enthusiastic about the problem presented and thus encourage the patient until he catches the spirit and wants to work. And this work must be a pleasure, for patients object to work, as work.

The best plan is to have a well-balanced program, part work, part play and plenty of exercise. When it is play time, play. Let there pervade a spirit of real pleasure and interest. It is the aide who puts heart into the play as well as the work, and into the work as well as the play, and thus spreads enthusiasm and good feeling among the patients.

### Enthusiasm for Patients Must Be Uniform

The aide must be equally enthusiastic about improving the deteriorated, demented patients and the more hopeful ones. One has to guard against the failing of paying more attention to the better patients. One is prone to be more interested in the patient who is making a beautiful piece of handwork, a wonderful rug, a fine piece of weaving, a fine basket or piece of wood carving, than in the patient who is able to do nothing, or perhaps only such simple tasks as raveling, spool knitting or making crude toys; yet, it is with these demented patients that the greater part of our work lies.

The rehabilitation of mentally ill patients cannot be divided into distinct steps. The graduations are so slight that the characteristics of each group merge almost imperceptibly into the contiguous ones. This being the case, the aide cannot limit her enthusiasm without limiting the results. The aide cannot be enthusiastic over a certain type of patient or one particular kind of craft and fail to manifest an equal degree of interest in the others, as a one-sided interest throws the whole out of proportion.

I have seen department heads so enthusiastic about craft projects and minor details that the appearance of the patients and the need of artistic and pleasing surroundings were almost entirely neglected. On the other hand, one can devote so much attention to the artistic side of the

occupational center and class rooms that more vital problems are slighted. In this as in everything else there must be a happy balance. All divisions of the department must be concentrated upon, weighed and measured in order more fully to realize the possibilities of the situation. There must be a sincere appreciation of the department as a whole.

### Attractive Surroundings Needed

One way to gain the interest and appreciation of patients is to make their surroundings "homey" and attractive in appearance, or rather to help them to do this by making articles to use on their wards to be harmonious in color and pleasing to the eye, as well as useful—curtains, rugs, table scarfs, hanging baskets, decorative wall hangings, window boxes, foot stools with woven or rush seat tops made by the men, or petit point or hooked tops made by the women, cushions for couches, etc. All these things contribute to the cheerfulness and comfort of the day-rooms, give the patient a keener interest and a more contented spirit. Let them make these things and see them in use. Let them see that they are not being made through any mercenary motive, but to add to their own comfort and happiness. It is often surprising how disturbed and destructive patients will react to beautiful surroundings. If the aide can succeed in gaining their interest and getting them to do these projects, they will not be so apt to destroy them.

### Instructor Must Radiate Courage

If anything of value is to be accomplished, there must be more than a merely passive attitude. One must become so saturated with his subject that he will become the center of radiation. If one is enthusiastic over his work, he is much more likely to be successful, even though the obstacles are great. There are always many hindrances and if one does not love his work he may easily allow these difficulties to cause him to fail. If one cannot find joy in his work, has not ambition, has not courage to work and seek to accomplish the most possible, he had better look into his own soul and inquire if he is giving his best; he had better find out why he does not love his work. If there is no good reason, he is doing the wrong work, has chosen the wrong profession.

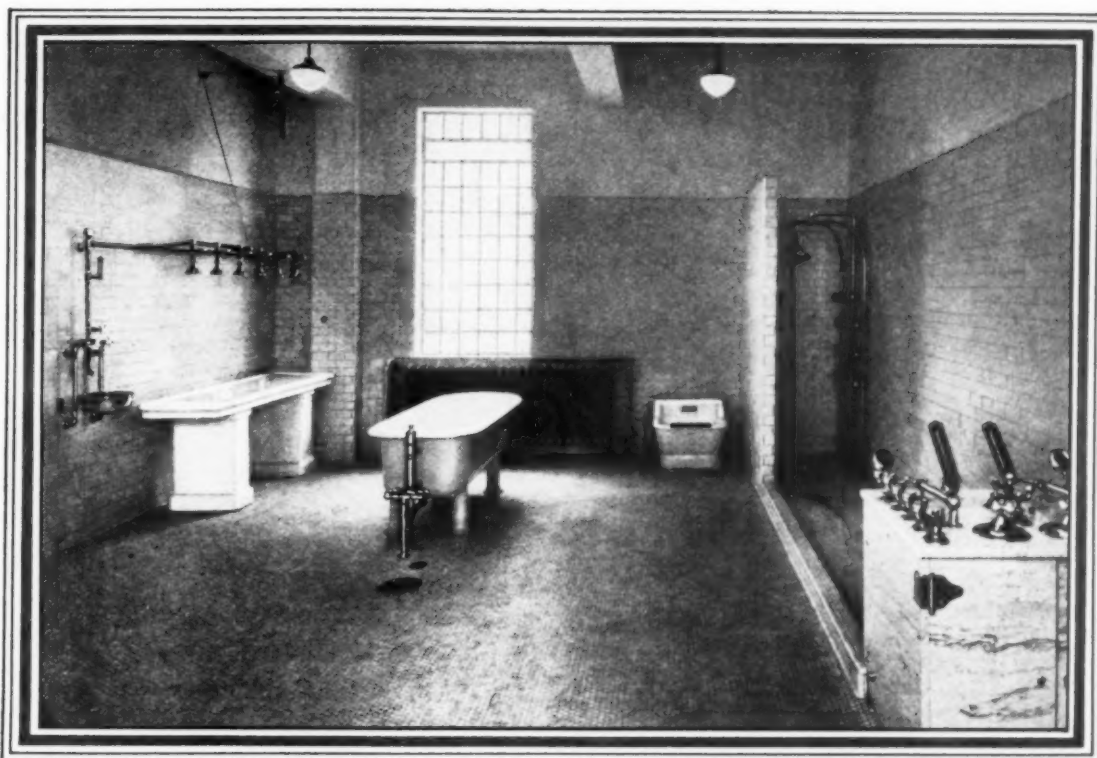
Warm water—water even at the boiling point—will never make a train move an inch, no matter how strong or perfect the locomotive.

There is no better way to enjoy one's work than by being enthusiastic over it. Something in this attitude makes one cease to be annoyed by little things that would otherwise discourage. Interest is turned toward the result of labor instead of being diverted by every little unpleasant detail that is encountered.

It is our own attitude toward our work that makes our daily task either drudgery or pleasure. Any activity may become irksome if considered in that light. On the other hand, the hardest work may be a joy if one is unselfish in it, and has the proper attitude toward it.

It isn't the new ideas one advances that count so much as the conviction one puts in his efforts, and the enthusiasm and interest he is able to inspire in others.

It is as easy for the strong man to be strong as for the weak man to be weak.—*Emerson*.



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# ADEQUATE EGRESS FACILITIES AS A PROTECTIVE MEASURE TO HOSPITALS

**I**T IS difficult enough to secure adequate egress facilities in factories or other buildings where the occupants are physically fit and mentally competent. The problem in buildings housing the sick and otherwise incapacitated is infinitely harder. The conditions in hospital buildings generally are bad, frequently deplorable. The reason the life loss is not greater is not due to good buildings, adequate exits, good alarm systems, adequate fire protection, and trained staffs, but to the fact that such buildings are used continually, and fires are likely to be discovered in their incipiency, and that nurses and other attendants have shown remarkable heroism in times of crisis.

### How the Egress Problem Differs

It is the difficulty and the expense of providing even reasonably adequate egress facilities in the ordinary institution that causes such emphasis to be placed in our former articles on fire prevention and on the installation of automatic sprinklers. With such an installation properly maintained, the chance of a fire getting to the point where it jeopardizes life is exceedingly remote.

The egress problem varies with the building construction, and what will answer for a fireproof ward building will not do for a tinder box serving the same purpose. It also varies with the character of the occupancy. Tuberculous patients able to walk and in full possession of their faculties present quite a different problem from patients who are mentally ill.

### Egress in Name Only

In a western institution, the only means of egress from a chapel seating 800 people and located on the third floor of a combustible building was through three narrow doors located at the rear of the chapel and leading to an open wooden stairway. All of the windows were barred.

At one large industrial school for girls, all girls were locked in their rooms on the upper floors of a combustible building throughout the night, the only protection against fire being dry powder tubes and hand grenades. Moreover, the basement of this institution contained considerable quantities of oil, grease, gasoline, and combustible materials generally.

In one of the most modern institutions for the mentally ill in this country, the nurses were found quartered on the third floor of a combustible building at the head of an open stairway with no other means of egress. Such con-

ditions are typical of those existing in hundreds of institutional buildings.

### The Need of Drills

In institutions housing children some attention is usually given to egress facilities and fire drills. The idea seems prevalent, however, that when persons have passed beyond the school age, they are beyond the need of fire drills, and consequently spend the remainder of their lives, wherever they may be, in absolute ignorance as to what action they should take at time of fire. This is the present condition of thousands of aged, blind, deaf, sick, crippled, and mentally ill persons throughout the country.

### Institutions for the Mentally Ill

In institutions for the mentally ill, the uncertainty of control at time of fire is still further complicated by the practice of keeping violent inmates under restraint, generally at remote locations on upper floors, where, behind locked doors, they are kept in straightjackets, camisoles, cuffs, etc. Restraint of this kind is generally used most freely in institutions managed by women. In one institution, seventy-seven inmates were found restrained in this manner at one time. Obviously, such patients should be located in the safest buildings, and on the ground floor, if possible, to permit most readily of rescue.

### Location of the Helpless

It is evident that in small institutions, a very definite effort should be made to have places of assembly such as chapels, dining rooms, and recreation rooms, located with special reference to ready egress, which almost always means the ground floor. Similarly, the seriously sick and the small children should be on the ground floor, if possible.

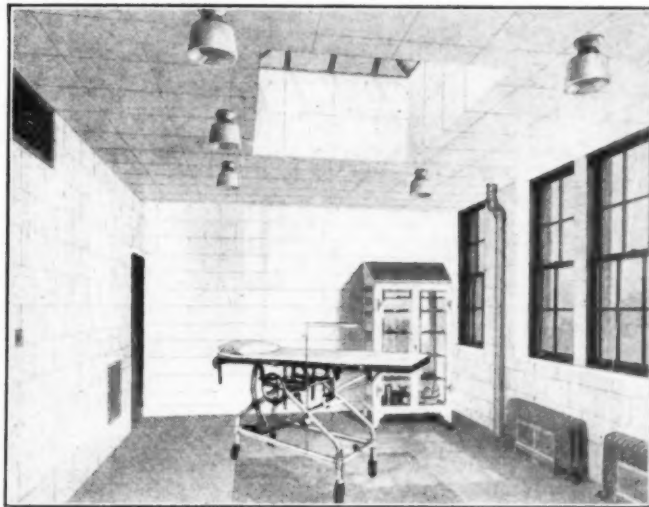
Much can be done in the ordinary institution along these lines to improve safety to life without any appreciable expenditure of money.

### Doors Should Open Out

While for individual rooms doors generally open inward, for larger assembly rooms, it is universally advisable that doors swing with the travel, and that care be taken to see that when opened, they do not obstruct corridors.

Doors should be kept unlocked wherever possible. In one asylum for the mentally ill, as many as five locks,

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# Big Pennsylvania Hospital

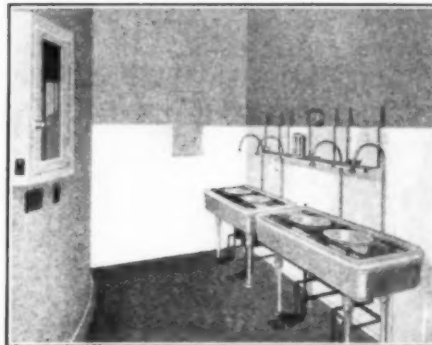
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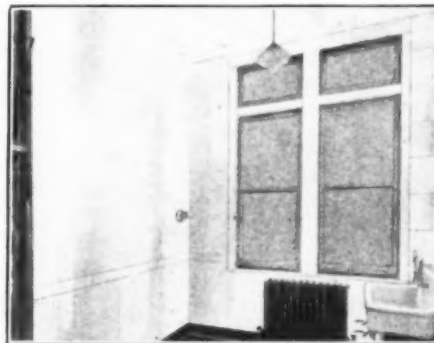
**T**HE Ashland State Hospital, Ashland, Pennsylvania, has Vitrolite throughout. The walls of the entrance, lobbies and corridors, as well as the operating, sterilizing and utility rooms, kitchens, toilets and superintendent's office are agleam with snowy white Vitrolite. It is everywhere that sanitation is of foremost importance.

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all different, have been found between inmates and exit to the outside, three of which locks were unnecessary for adequate control of inmates.

The minimum number of locks, standard keys, as wide a distribution of keys as necessary, and constant attendance are the chief means of making the best of a fundamentally bad condition. This, of necessity, pertains, when persons are under lock and key in buildings not absolutely incombustible in every sense of the word.

### Windows Not Free for Exit

Most fire escapes, as at present installed, are reached through windows. Firemen use windows very often for rescuing persons and for fighting fires inside of buildings. In spite of this, in many institutional buildings windows are covered by screens, ranging from light wire mesh to heavy iron bars set in the masonry. In many cases, substantial protection is necessary on some windows to prevent escape of inmates, but there is no excuse for massive window bars. There are cases on record where persons have been roasted to death behind bars of this kind, while firemen outside were helpless to aid them. Where necessary, window screens should be of heavy wire mesh set in a rigid removable metal frame, secured by a lock on the inside, but capable of being opened from outside without a key. Windows should be of ample size, with sills low enough to permit of their use as exits.

### Corridors Should Be Kept Free

In the dark, or smoke, or under panic conditions, passage through corridors may prove difficult or impossible. Corridors should, of course, be wide enough to accommodate all who will use them at one time under any condition. They should further be kept absolutely clear at all times, especial attention being given to the removal of wheel chairs, spare cots, and other obstructions which are apt to be left temporarily in the corridors. Under certain conditions, especially in extensive corridors of combustible buildings, it is advisable to provide smoke barriers and draft stops, consisting of light partitions and swinging doors, at various intervals to retard the spread of smoke and flame for a sufficient period to permit of safe egress.

### Horizontal Egress

The most practical provision that can be made for egress in hospital buildings is an arrangement for moving occupants rapidly and in an orderly manner horizontally through fire walls or fire-resistive corridors, or across open bridges, to buildings or sections which are safe. Where buildings are large, they can be subdivided by standard fire walls equipped with automatic fire doors, thus dividing the building into two or more separate sections, with little danger of fire spreading from one section to the other before all occupants are safely out.

In the majority of present institutional buildings, all floors are connected by open stairways, which may serve as flues for the rapid spread of smoke and flames. When fire occurs on the lower floors of such buildings, the stairways are quickly made impassable. The stairs themselves are often of stone or metal construction, cleaned frequently with oil, and very slippery. Handrails, if provided at all, are seldom at both sides of the stairways.

As far as possible, in new buildings, stairs should be located in fire towers. In all existing combustible buildings, open stairways should be enclosed in fire-resistive partitions with fire-resistive doors, held open, if at all, by a fusible link arrangement, which will insure prompt closing

at time of fire. At least two fire towers or enclosed stairways should be accessible from every portion of each building.

Wherever possible both in new buildings and in existing buildings, standard smokeproof towers should be provided. Stairways completely enclosed in fire-resistive towers and commonly known as Philadelphia fire towers, provide the safest means of downward exit for able-bodied persons. Entrance to such towers is by open air balconies on each floor, with fire doors on the openings to prevent spread of smoke and flame.

In many of the present hospital buildings, including even the most modern, stairways are enclosed in fire-resistive walls, but doorways at the various floors are of wood, often with glass or open transoms above. Stairways of this type offer only a small portion of the safety assured by standard fire towers.

### Fire Escapes

Some fire escapes, to be sure, are wide and properly railed; the stairs have an easy pitch; access to them is direct; they lead to the ground; they are located opposite blank walls or adjacent windows, are protected with metal frames and wired glass; they are a valuable means of egress, if used. A large majority of fire escapes, however, are a delusion; they may prove death traps. Narrow, steep, reached by climbing over window sills, terminating many feet from the ground, passing windows out of which flames are likely to pour, never used at times of drills, if indeed drills are held, they are a monument to the ignorance of the authorities and the selling ability of the manufacturers. An outside fire escape on an institutional building is generally an admission of the inadequacy of its normal exit facilities.

Adequate exit in new buildings should always be secured without resorting to fire escapes. On many existing buildings, however, fire escapes are necessary because of the inadequacy of the inside stairways. Where necessary, their construction and installation should be in accordance with the National Fire Protection Association rules.

Fire escape stairways should extend to the ground. Where for any reason it is not possible to arrange this, a counter-balanced section should be provided.

Fire escapes should be kept unobstructed at all times and this condition verified by frequent tests and inspections. Painting is necessary to prevent corrosion, and by making the escapes the same color as the buildings, they can be rendered quite inconspicuous. Escapes should, of course, be kept free of ice and snow.

### Signs and Lighting

Red and white exit signs, with letters at least five inches high and illuminated at night, should be placed over all stairways and doors leading directly to the outside. Exit signs should not be omitted over doors leading from roofs and basements. The current for exit lights should preferably be obtained from a system separate from that ordinarily used for lighting purposes. It is also well to provide auxiliary gas lights for use in case the electric service is interrupted.

The fact is, as all who have had experience in business of any kind know, that it is the individual who does things—not a board or a commission. There is no commission anywhere, there is no board anywhere that does things affirmatively unless it is dominated by one man, and the only benefit from the other members of that body is in their advisory capacity.



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## MEETINGS, CONVENTIONS AND CONFERENCES

### METHODIST HOSPITALS AND HOMES ASSOCIATION HOLDS SEVENTH ANNUAL MEETING

**A** PLEA for the recognition of nursing schools on the same basis with other educational institutions, the need for more extensive publicity, and ways and means of raising funds for hospitals, were some of the subjects of general interest touched upon at the seventh annual meeting of the National Methodist Hospitals and Homes Association. The meeting was held in Chicago, Ill., February 18 and 19, at Edgewater Beach Hotel.

In his address as president of the association, Dr. C. S. Woods, superintendent, St. Luke's Hospital, Cleveland, Ohio, made a plea for the new Board of Hospitals and Homes and Deaconess Work to direct efforts toward the recognition of nurse training schools to be given the same consideration with colleges and schools under the direction of the Church. He emphasized the need of larger funds to carry on the work of hospitals, in order that they may maintain adequate laboratory and research facilities, and urged members of the association to influence benevolent citizens to help in this work by contributions toward the development of hospitals and homes.

The review of the year's work, given by the Rev. W. H. Jordan, Asbury Hospital, Minneapolis, Minn., showed the progress which Methodist hospitals have made in their program of standardization. Four years ago, but four Methodist hospitals in the country had met the minimum requirements of the American College of Surgeons, while today fifty-seven of the hospitals have met these requirements—the highest percentage of any group of denominational institutions in the country. Reverend Jordan also called attention to the need for more homes for the aged, in view of the already congested condition of many of the homes and the waiting lists which are becoming longer each year. He brought out that White Cross Day, the Sunday preceding Thanksgiving, on which collections are taken up in the Methodist churches for the maintenance of hospitals and homes, had proved successful last year. This day was instituted at the 1924 meeting.

#### Only Two Medical Colleges for Negroes

One of the most interesting papers of the program was the one "The Need and Development of Hospitals for the Colored Race," read by Dr. J. J. Mulloney, professor, Meharry Medical College, Nashville, Tenn. Dr. Mulloney has made a thorough study of the problem of the education and opportunities for practice of the negro physician, and his findings are of interest in view of the problem which this country faces in providing professional advantages to the negro. Meharry Medical College holds the

unique distinction of being the only institution in the country which is a purely professional college for negroes. Howard University, Washington, D. C., is the only other educational institution which maintains a college of medicine for negroes.

#### Dearth of Internships for Negroes

Meharry Medical College will graduate thirty-six medical students in May. This fact is of interest in the light of the inadequacy of internships for negroes in the country. At present there are only nine hospitals which offer internships for negroes and but thirty-six interns can be accommodated in these institutions. The hospitals offering these internships are: The Freedman Hospital, Washington, D. C.; Kansas City Colored Hospital, Kansas City, Mo.; City Hospital, No. 2, St. Louis, Mo.; George W. Hubbard Hospital, Nashville, Tenn.; John C. Andrews Memorial Hospital, Tuskegee, Ala.; Provident Hospital, Chicago, Ill.; Flint-Goodrich Hospital, New Orleans, La.; Mercy Hospital, Philadelphia, Pa., and a new hospital which is being erected at Bloomington, N. C. About twenty-two other hospitals admit negro interns, but these institutions are not yet on the approved list of hospitals for internships.

Dr. Mulloney urged the association to promote the education of the negro medical student by (1) improving and increasing the efficiency of existing hospitals; (2) concentrating efforts on one thoroughly modern institution, instead of erecting hospitals with inadequate facilities; (3) proper kind of publicity and, if possible, financial support.

That the hospital and homes association has gained the forefront in philanthropic work of Protestant denominations, was brought out by the Rev. N. E. Davis, corresponding secretary, Chicago, Ill., in explaining the work of the new board of hospitals, homes and deaconess work. This board was reorganized last December and its name changed to include deaconess work, on the ground that this work should be equally promoted with that of hospitals and homes. The board is now departmentalized into eight committees: personnel; survey and standardization; pensions and endowments for deaconesses; publicity; homes (for children, old people, deaconesses and working girls); finance; general reference, and the American White Cross.

#### To Publish Monthly Bulletin

The board has taken definite steps to promote its publicity work among those of the church who are not familiar

# The "good word" that helps so much to build prestige for your hospital



When a discharged patient is visited by friends, what is the most natural thing in the world for her to talk about? The hospital, surely. She will relate her experiences there; she will speak of her physician or surgeon; of her nurse; of her room; of the various attentions accorded her. And sooner or later, but inevitably, she will mention one thing that is always of especial interest to women—the *food*.

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New Orleans, La., 514-6 Tchoupitoulas St.  
New York, N. Y., 605 W. 27th St.  
Norfolk, Va., 517 Front St.  
Oklahoma City, Okla., 319 E. Grand Ave.  
Philadelphia, Pa., 5th & Willow Sts.

Pittsburgh, Pa., 209 Ferry St.  
Portland, Me., 253 Commercial St.  
Portland, Ore., 41 Front St.  
Salt Lake City, Utah, 404 Vermont Bldg.  
San Francisco, Calif., 132 Pacific St.  
St. Louis, Mo., 206-10 S. 7th St.  
St. Johns, Newfoundland, 158 Duckworth St.  
Savannah, Ga., 565 W. Hull St.  
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Toronto, Ont., Canada, 32 Front St., W.  
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Jams	Pork and Beans	Boneless Chicken
Jellies	Olives	Evaporated Milk
	Pickles	



with what is being done, by means of a monthly bulletin, *World Service News* the first issue of which will appear this month. It will be edited by Mr. T. E. Newland, assistant secretary of the association, Chicago, Ill.

The subject of "Raising Funds for Philanthropic Institutions," was handled by Dr. C. E. Wakefield, Flower Hospital, Toledo, Ohio. Dr. Wakefield divided his paper into two sections, that of raising capital for buildings; and (2) that for maintenance funds or operating deficits. He said that the success of raising building funds by an intensive campaign in the community or through the churches depended upon (1) selection of adequate leadership; (2) good publicity; (3) a sound organization involving a central committee and training of teams. In soliciting funds, he strongly advised a division of prospects into groups which should be approached through different channels, and of selected lists of persons who should be carefully catalogued. He gave as the methods for soliciting funds, that of personal solicitation through the work of a field secretary, and the insurance loan. By this last method he referred to the offer which is now being made by a number of insurance companies whereby a sum of money is loaned to the building project, upon the underwriting of a certain amount of insurance among a number of individuals. The sum loaned by the company is a percentage of the whole amount underwritten. This method is simply an indirect way of securing subscriptions. He also emphasized the value of good publicity in securing funds, and urged institutions to make an effort to distribute periodical literature which contained interesting information, and would help toward working up a sustaining membership. He urged hospitals to enlarge their field of silent partners such as bankers, attorneys, and doctors who are often valuable assistants in securing information of the economic status of citizens of the community.

#### Endowed Rooms for Employees

The paper on "Pensions for Hospital Workers" was read by the Rev. W. H. Jordan, in the absence of Miss Mae Middleton, Methodist Episcopal Hospital, Philadelphia, Pa. The paper brought out the value of the pension to the institution in lessening the labor turnover, and to the worker, as an added incentive for staying on the job and a means of maintenance during infirmity. The paper raised the question of the advisability of an endowed room for employees as well as for nurses. It was brought out in the discussion that some of the hospitals of the association are already providing free service to servants and employees of the institutions. A motion was carried that a committee be appointed to consider the advisability of pensions and how they should be handled.

In the round table Thursday afternoon a number of interesting points were discussed in the relation of the hospital to the nurse. The information volunteered by a number of superintendents showed that each student nurse costs a hospital a minimum of about fifty dollars a month. The objection to training schools in small hospitals was raised because of the high cost of training, but the consensus of opinion was the small hospital should maintain its training school even at a financial sacrifice, in order to perform the educational function of the hospital to the community. The opinion was also expressed that purely technical or educational institutions could not adequately train the student nurse, since a large part of her work, of necessity, should be the practical application of her knowledge in the hospital.

The following officers were elected for the coming year:

Dr. C. S. Woods, superintendent, St. Luke's Hospital, Cleveland, Ohio, president (reelected for the second year); The Rev. U. S. Brown, Home for the Aged, Topeka, Kan., first vice-president; Mr. J. A. Diekmann, Cincinnati, Ohio, second vice-president; Mr. Joseph L. Miller, superintendent, Methodist Hospital, Peoria, Ill., third vice-president; Mr. J. B. Jones, Children's Home, Worthington, Ohio, fourth vice-president; Mr. G. T. Notson, superintendent, Methodist Hospital, Sioux City, Iowa, secretary, and Miss Blanche Fuller, superintendent, Nebraska Methodist Hospital, Omaha, Nebr., treasurer.

At the closing session a committee was appointed to consider the advisability of changing the date of meeting to conform with that of the Protestant Hospital Association.

#### REPORT OF INFORMAL STUDY OF COLORED NURSE PROBLEM

(Continued from page 270)

lected from cities of 10,000 or more population. In addition, the cooperation was obtained of national nursing organizations, medical and allied association, life insurance companies and social agencies and national associations for the colored.

The report shows that the use of colored graduate nurses is comparatively small, as but sixty-six of the institutions responding are employing them. Of this number seven stated that they were employed only on private duty, two reported their use as supervisors, two said that they were employed "on request," and one reported the use of a colored graduate nurse in the colored contagious ward.

Of the sixty institutions reporting the use of colored nurses as specials, eleven stated that they were used for colored patients, two replied that they were employed when requested, and one replied that they were used "with the patient's consent." One hospital reported that it would employ colored nurses if, and when, it had colored patients. Twenty-one of the hospitals for colored reported colored graduate nurses employed regularly and ten as specials.

Incorporated in the questionnaire was the request for information on the use of colored interns. Twenty-one of the 1,696 hospitals reported that they were using colored interns. Fourteen of the hospitals were those for the colored; in some instances, colored departments of city or state institutions. Only six of the twenty-six colored hospitals replying stated that they had colored interns. None of these hospitals is on the accredited list of school of nursing.

Part two of the study was devoted to the supply and demand for colored nurses in public health and visiting nurse work. Fifty-eight per cent of the health officers, representing every state but one, replied to the questionnaire. Of the 548 replies only fifty-nine reported the use of colored nurses. Of the 156 commenting on the demand for colored nurses, 132 stated that the supply was sufficient to meet the demand; twenty-four believed the demands were not met by the number of colored nurses now available. Eighty-one reported that colored nurses were not needed in their communities because of no, or very small number of, colored people.

Copies of this report, including the entire tabulation of replies have been filed with the American Nurses' Association, National League of Nursing Education, National Organization for Public Health Nursing, and the National Association of Colored Graduate Nurses.

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## HOSPITAL EQUIPMENT AND OPERATION

With Special Reference to Laundry, Kitchen and Housekeeping Problems

Conducted by HERMAN SMITH, M.D., Superintendent  
Michael Reese Hospital, Chicago, Ill.

### DISTRIBUTION OF RECORDS BY PNEUMATIC TUBE CARRIERS

BY NATHANIEL W. FAXON, M.D., DIRECTOR, STRONG MEMORIAL HOSPITAL, ROCHESTER, N. Y.

**T**HE distribution of records in a hospital has always been a problem which has vexed both those upon whom has fallen the duty of distribution and those who desire the records for use.

The simplest form of such distribution is by messenger. Those who have used this system know that the human equation is constantly a disturbing factor in prompt distribution of records. The cost of such a method is also high if prompt service is to be attained. If a small number of messengers is employed in order to keep the cost of distribution low, then the service is often unsatisfactory. In out-patient departments, where the demand varies widely at different hours in the day, it is difficult to make a messenger service flexible enough to meet the varying conditions. If, as happens with a central record room, both out-patient department and house are served from one place, there is additional difficulty in adjusting the messenger service to the rapidly fluctuating demands of the out-patient department and the steadier demands of the house, which demand, however, usually involves the traversing of greater distances. In fact, it may be conceded that the messenger service is unsatisfactory. Having arrived at this conclusion, the next step is to supply a more satisfactory service.

#### Tube System Supersedes Other Carriers

There have been developed for commercial use, various types of automatic carriers. The first and simplest form of these was the overhead trolley system, operated by hand. The next step was to install upon this overhead trolley a mechanically operated endless chain or wire, upon which baskets were carried. The pneumatic tube followed. The cost of installation and the speed of operation varies directly in a similar manner. Banks, manufacturing plants, department stores and similar forms of business have used all of these various types of carriers. Of late years, the pneumatic tube has reached a stage of perfection and offers so many more advantages than the other types of carriers that it is more generally adopted than the other types.

In the equipment of the record system at the Strong Memorial Hospital, it was determined to follow the practice of commercial companies and use the pneumatic tube system. A central record room with a single type of record will be used, serving both the out-patient department and the house. A pneumatic tube system will

be installed running to the various clinics of the out-patient department and to each of the ward divisions in the house and to the information desk and cashier's office in the main hospital.

This pneumatic tube system will consist of ten receiving stations and seventeen sending stations at the central desk, situated in the record room. The clerical force of the central record room will operate the central desk; no additional persons will be needed. There will be seventeen receiving and seventeen sending sub-stations located in the out-patient clinics and ward divisions, operating on seven combined and three independent lines. That is, tubes may be sent from the central desk to each of the sub-stations. On return, in many instances, two sub-stations are connected with the same return line. This is merely a matter of economy in installation.

#### Power to Be Supplied by Fifteen H.P. Motor

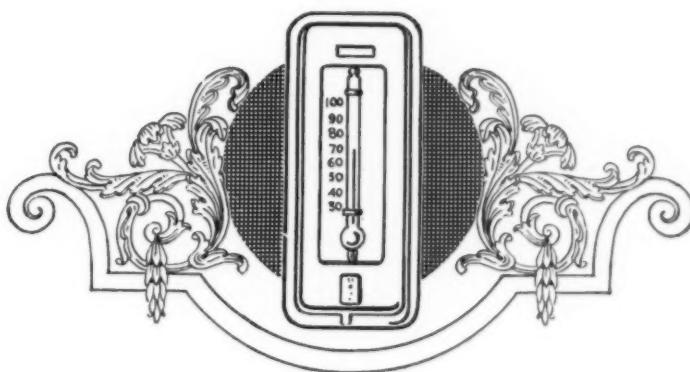
The operating power is supplied by a fifteen horse power motor, operating a blower which has a capacity of operating seven lines simultaneously. The tubing has a four-inch outside diameter built of No. 16 stubs gauge. The carriers are of the usual pneumatic tube type, twelve inches inside length and about two and five-eighths inches inside diameter. By experimentation, it has been found that this size of tube will take several bulky records. Each tube will have an indicator upon it so that it is possible for one of the sub-stations to send records to the central station and indicate upon the outside of the carrier that such record is to be relayed to another sub-station.

#### Rolling Not to Injure Records

Objection has been made that by the use of this system, records must be rolled. This objection was considered, but it was felt that by the use of an outside cover of Kraft paper that the records could be sufficiently well protected so that rolling would not be detrimental to the record. Furthermore, when it is considered that a record is in transit only a few seconds and that after being removed from the tube, that it is either laid flat on a table or that it is filed away under compression in a vertical file, it will be seen that the rolling of the records becomes a matter of small moment.

From the financial end, it appears as though the cost of installation could be amply justified. The cost of the





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is still another of the numerous hospitals equipped with The Johnson System of Temperature Control. East, west, north, south—everywhere The Johnson System has been included as necessary hospital equipment. And hospital installations of The Johnson System are increasing year by year. This indicates the reputation The Johnson has gained, and shows the growing recognition of Johnson Temperature Control advantages for hospitals. To leave it out of *any* hospital is a *serious mistake*.

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system as installed in the Strong Memorial Hospital is approximately \$23,000.00. The cost of operating will be the cost of operating a fifteen horse power motor, which, of course, depends upon the cost of electricity at the point of installation. A liberal estimate of the cost of running motor, supplies, etc., will not exceed \$2.00 per day, or \$730.00 per year; interest on \$23,000 at 5 per cent is \$1,150; depreciation at two and one-half per cent of total cost will be liberal, as only motor and desk terminals will need replacing. The total cost of operating plus interest and depreciation will be \$2,455. Messengers can certainly not be obtained for less than twelve dollars a week, which means a cost of \$624 a year for each messenger. It will readily be seen that the total cost of operating a carrier system will not exceed the cost of maintaining four mes-

sengers at \$2,496 per year. Superiority of the tube system over the messenger service is at once apparent.

The use of automatic carriers in hospitals is, as far as I know, untried.\* It is possible that unforeseen difficulties will develop, in which case these difficulties must be met and overcome as far as is possible.

The tube system promises the following advantages: a reduction in the number of employees and the elimination of many needless steps; the substitution of a prompt and certain method of delivery for one that is slow and uncertain. These advantages may be obtained at an equal, or perhaps a lesser, cost and seem at the present moment to justify this installation.

\*The new pavilion of St. Luke's Hospital, Chicago, Ill., is making provision for the installation of pneumatic tube carriers.

## THE STERILIZING EQUIPMENT OF THE HOSPITAL

BY HENRY HEDDEN, M.D., SUPERINTENDENT, METHODIST HOSPITAL, MEMPHIS, TENN.

**S**INCE modern methods of sterilizing are practically standardized and are accomplished more or less satisfactorily in the general types offered, the hospital's selection of sterilizing equipment should be largely on the basis of utility and maintenance. It should be kept in mind, however, that of all the equipment in the hospital, possibly without exception, the sterilizers are subject to greater neglect or abuse than any other fixtures. This abuse is not willful, of course, but because of the constantly changing personnel and the lack of the mechanical experience needed, competent operation of these fixtures can hardly be expected.

A careful inspection of design, construction, and materials usually reveals the merits of a sterilizer. There are more valves required for the operation of the sterilizers in an average hospital than for any other fixture or group of fixtures outside of the power plant. For the complete steam heated sterilizer equipment of a medium capacity general hospital, say about 100 beds, there are approximately 150 valves—all potential points of trouble, all subject to unusual performance and entirely outside of the immediate supervision of the engineer's department. Hence these valves must be the best obtainable for this particular use, and this point is emphasized as typical of the high quality necessary in all details of sterilizer construction.

### Common Methods of Sterilization

The most common methods of sterilization are: (1) Moist heat; (2) dry heat; (3) chemicals; and of these moist heat variously applied is, by reason of its wider range of adaptability, the most generally used method.

By dry heat is meant sterilization by dry air, using no water or steam. This is useful when no steam outfit of any kind is obtainable as ovens at homes in maternity or accident cases. It is necessary to expose the materials to a temperature of 330 to 350 degrees F. for half an hour at least, as dry air does not penetrate well; so, if even a small package of dressings were heated to 350 degrees F. it would not be likely to get much above 330 inside in half an hour. This method is not commended, for the reason given, and almost any kind of steam boiler even a wash boiler is better. A sufficiently high temperature in dry air to secure sterility almost always scorches or ruins cotton goods.

Boiling in water is the general method in use today in hospitals for the sterilization of metal instruments, glass

ligature tubes, other glass instruments, etc., and by some for rubber gloves. It is the real, good, sure, safe method of sterilizing, with no frills or fuss, no vacuum or patent valves about it. If everything were boiled in water for every surgical operation there would be a great deal less trouble. Twenty minutes of real boiling is enough.

### Chemical Sterilization

Chemicals, although still quite largely used, have their limitations, and great care must be exercised in their use to guard against injury to the articles sterilized as well as to the individual doing the sterilizing.

Pressure sterilization is accomplished through the use of apparatus designed to operate with steam under pressure of fifteen or eighteen to twenty-five pounds above atmosphere, at which there is a corresponding temperature of 248 to 267 degrees F. Naturally, apparatus to operate satisfactorily under such steam pressure throughout years of service must be very substantially built and so simple in design as to insure proper operation in the hands of inexperienced persons. There must also be an ample factor of safety in the construction of pressure sterilizers as a guarantee of long continuous service without interruption. To this end it is essential that only the highest quality of materials—bronze, brass and copper—be used and that the work be done by skilled men. The initial cost of such equipment may be a trifle higher, but this little difference is generally far more than offset by savings to be effected in installation and in economy of operation, where equipment is properly selected.

### Independent Steam Generator

Dressing sterilizers should have an independent steam generator equipped for the desired method of heating and so designed as to be readily accessible for internal cleaning. The objection to the use of steam direct from the boiler plant is that frequently oil vapors, iron rust from boiler and steam lines and occasionally taints from chemical boiler compounds are carried right into the chamber of sterilization; whereas, all this is avoided when steam is regenerated from clear water right at the apparatus.

Recent practice, however, seems to show a tendency toward using boiler steam direct to the chamber of sterilization without a sub-boiler or independent steam generator. The disadvantages mentioned above from using boiler steam direct are being overcome by the use of the steam separator. With the above mentioned disadvantages over-

# An ideal carbohydrate food with this added advantage: *Unusual ease of digestion*

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The carbohydrates of Cream of Wheat are almost completely absorbed—98%. It also contains a high quality of protein which is absorbed with an unusual degree of rapidity and completeness.

The form of Cream of Wheat is so simple it puts no tax upon weak digestions. By laboratory tests it is much more rapidly digested and fully absorbed than oat or corn cereal.

Cream of Wheat has a great advantage, too, over similar foods which are sold in bulk or in inferior packages. In every process of milling and packaging it is safeguarded from all impurities. It is put through a thor-

ough cleansing and is heat-treated before boxing.

Then it is packed in an absolutely tight box which safeguards it against dirt and weevils. The package itself is first sealed, then a heavy Manila wrapper is applied to it and sealed, then finally the outside label is sealed. In this way it is protected as is no other cereal on the market.

Always the same in content; always the same precautions to make and keep this food absolutely free from contamination—this is the standard which alone can serve physicians and dietitians as they should be served.

We have prepared a series of educational wall charts suitable for classroom work which we are glad to send free to teachers and dietitians. We have also published a valuable booklet on child feeding which we will mail on request.



## *Cream of Wheat*

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come in this way, the use of steam direct from the boiler will permit of the installation of less complicated and less expensive apparatus and will also do away with several portions of the apparatus, which are bound to cause more or less trouble. Some of these are the sub-boiler water feed valve, drainage valve, water gauge, waste line and valves. This method also results in a great saving of time required to produce sterilizing pressure, and also a marked saving of steam.

#### Automatic Regulating Valves

Automatic regulating valves in steam or gas lines, which close down the steam or gas when the required pressure and temperature of sterilization is reached, are very desirable accessories. These, in connection with an automatic recording gauge affording a permanent record of each sterilization at the cost of one paper chart a day, will prove profitable in many ways aside from the most desirable elimination of the noise and excess moisture from the almost constant blowing-off of safety valves during the time of operation.

#### Water Sterilizers

The element of uncertainty of positive sterilization of a sufficient quantity of water for surgical use in the modern hospital by simply boiling at atmospheric pressure, and the difficulty of its safe storage in open or non-pressure vessels brought about the pressure method of sterilization many years ago. Since then many refinements and improvements have resulted in water sterilizing equipment being brought to a very high degree of efficiency and economy. The ideal arrangement is to provide two reservoirs of the desired capacity, mounted on a common standard, with a filter between, and arranged for the desired method of heating, which may be steam from a central boiler plant where high pressure is available, or electricity, or gas. Where the above heating mediums are not available, kerosene or gasoline can be used, but they are the least desirable methods. The water reservoirs should be constructed of seamless brass or copper shells lined with pure block tin, and provided with removable bottoms (in preference to removable tops) to facilitate internal cleaning when lime scale or other sediment so prevalent in most sections of the country becomes so hardened that it can not be blown off through the waste lines. Pipe connections should be preferably of U. S. standard seamless brass pipe and heavy duty fittings, to avoid rust, corrosion and leakage, which are ever present when ordinary iron or steel pipe is used.

#### Concealed Installations

At present, in making a new installation of sterilizers, there is a very marked tendency to recess into the walls all of the pressure sterilizers, including pressure dressing sterilizers, water sterilizers and pressure instrument and utensil sterilizers, so that the only exposed parts are the operating valves and the door to the sterilizing chamber, and the water gauge on the water sterilizing tanks.

The advantages of this system are many. The only parts requiring the high finish are those which are exposed to view in the sterilizing room. It makes a much cleaner installation and removes from the sterilizing room a very large portion of the unnecessary heat. No greater space is required for this method of installation than for the open or exposed method, and there is no question but that the appearance of the installation is very much better than where the entire sterilizers with their mountings, stands, etc., are exposed. Some prefer, however, to use the exposed method of installation and when this is done,

undoubtedly the best and most sanitary arrangement is the use of wall bracket mountings. This does away entirely with the necessity of floor stands with their unsightliness and unsanitary features. It adds, however, somewhat to the cost to use wall bracket mountings, as special structural features must be securely incorporated into the wall construction to provide for the stress of weight of sterilizing fixtures.

#### Use of Soft Water

The use of soft water in the sterilizers is one that should recommend itself to every hospital. In most of the middle western cities the water derived from the usual city supply contains a great amount of accumulated lime and sediment, in some instances as much as four pounds to every thousand gallons of water. There are several sources from which soft water can be obtained for sterilizer use. In the smaller cities a cistern can be used and the rain water allowed to collect and drain into the cistern, and be pumped into the hospital. There are also to be had several water softening systems for treatment of hard water. Where hard water is in use, after a short while, the inside of the sterilizers becomes coated with lime which becomes very hard. When this happens it is necessary to take down the apparatus and clean out the inside with muriatic acid, which dissolves the hard lime and forms a paste-like substance. Care should be taken in the use of the acid, as, of course, it is very strong.

Utensil and instrument sterilizers of the non-pressure type are very much alike in general design and construction, but vary considerably in size. The most desirable type is constructed throughout of high quality heavy copper with rounded corners and slightly dished bottoms to avoid pockets and to facilitate draining; both types should have suitable provision for raising tray (or trays) cover and contents simultaneously, and air checks to prevent slamming, when closing. One recent helpful refinement is the placing of a removable screen over the waste outlet, thus preventing scale or foreign matter from getting into and clogging the waste lines.

#### Instrument Pressure Sterilization

There is an increasing tendency towards pressure sterilization of both utensils and instruments, using the single jacket type of horizontal autoclave for the former and the standard dressing sterilizer (steam jacketed autoclave) for the latter. Either the regular dressing sterilizer may be used for this purpose, or a smaller size, fitted with trays for instrument sterilization exclusively.

For the emptying, washing and sterilizing of bedpans and urinals there are two types; one provides for the quick (about two minutes an operation) emptying, washing and sterilizing of bedpans and urinals, but not the contents; the other does the above and, in addition, provides for the sterilization of the contents, but naturally cannot be operated as quickly. The construction of each is of first quality bronze, brass and copper throughout, except the stand, which may be either enameled tubular steel or cast brass pedestal type in dull nickel finish. In each, provision is made for emptying the pan after it is placed within the sterilizing chamber and the cover closed and sealed against any splashing or escape of odor. Cover and waste valve are foot operated, thus leaving the attendant's hands free.

#### Selection of Heating Medium

The selection of a method of heating the sterilizers is naturally governed by local conditions and a consideration of economy. Medium pressure steam,—not less than



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### Leaves no greasy film to collect new dirt

Where so-called "cleansers" leave always their invisible slippery film to collect new dirt, this "Porous Powder" leaves nothing but the glassy surface itself.

*Without grit to scratch, without the greasiness of soap, actually without chemical action, this new product removes dirt and grease as easily as wet sawdust picks up dust. Can't hurt hands or surfaces.*

**I**MAGINE a tiny grain of powder as porous as a sponge

- not gritty, but soft and crumbly
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This is the remarkable new "Porous Powder" for cleaning. Nothing like it has ever been known before.

**A mechanical action—no chemicals. Yet no grit, either.**

Ordinary so-called "cleansers" do their work because they contain strong chemicals. That's what hurts the hands and eats the paint off walls or woodwork. "Porous Powder" has no chemical action at all. Neither does it contain abrasives to scratch things clean. It simply catches hold of the dirt and grease in its tiny pores

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Above all, this remarkable product *saves time*—in many cases cuts cleaning time in half. Then, too, because this one product can be used for practically every cleaning use, there is none of the bother, delay and cost of changing from one special product to another a dozen times a day.

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Send us by return mail, without charge, your sample sifter-top metal container of Be-Square, the new "Porous Powder" for all forms of cleaning.

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thirty-five pounds and preferably fifty at the fixture,—electricity and gas, have had practical demonstrations sufficient to be considered as standard methods.

### Electrically Heated Sterilizers

The fact is not generally appreciated that there are many institutions where electrically heated sterilizers should be used, where they may be used with greater satisfaction and even at less expense than if heated by either gas or steam. In making this broad statement, it is assumed that high-grade, scientifically developed, apparatus is being considered.

It is not intended to infer that all small hospitals should use electricity, but the average small hospital of fifty beds or less or possibly greater capacity should consider electricity when it plans this branch of its equipment. It is a fact demonstrated in many hospitals all over the country that under certain conditions electricity meets the requirements better than any other method. The decision to use electric sterilizers, however, should be made only after careful investigation. Over-enthusiasm on the subject may cause unwarranted expense, as, for example, the production of electric power by generating steam in the institution's power plant, in order to heat sterilizers.

No exact rule can be formulated, but the following paragraphs will help in a preliminary way to determine what method of heating is best adapted to given conditions.

If the hospital is large enough to maintain a power plant and has other use for pressure steam (forty to sixty pounds) all the year around, the problem is simple. This hospital should use steam for sterilizing; it can ill afford to use anything else, for steam equipment wears well, steam heat is much more rapid and it has the great advantage that no part of any sterilizer so equipped will be injured if the attendant should operate the sterilizer dry.

But installing a steam plant for the sole purpose of heating the sterilizers is an expensive luxury. Any high pressure boiler should be handled only by a licensed engineer, whose salary alone would be several times the cost of the electric power required for the sterilizers, even at a high rate. It would also cover any probable expense in repairs to the heating equipment. Then, too, electricity is ready to use at any time, and it would not be practicable to keep up steam in the boiler more than for a few hours each day. During the remainder of the day the sterilizers are not in use.

The first cost of a battery of electrically heated sterilizers, completely installed, would be a great deal less than the cost of the same sterilizers, steam heated, including the boiler and accessories.

### Disadvantages of Gas Sterilizers

Gas heated sterilizers are in general use and usually function very well, but have marked disadvantages. They are always more or less dirty, keep the sterilizing room intensely hot, and the air vitiated. In close quarters they are always objectionable, as they detract from the ideal sanitary condition so essential in surgery. But if the nurse permits the water to evaporate or drain out when the gas is lighted, the entire sterilizer may be ruined in a few moments; certainly expensive repairs will have to be made, involving delay, and the sterilizer after one burnout will never look right again. Repeated burnouts will certainly necessitate replacement.

### Advantages of Electricity

Electricity has advantages over steam or gas, in that it is perfectly clean and cooler. Most of the objectionable

features of gas are entirely eliminated, and electricity does its work more quickly. If you turn on gas in an empty sterilizer, you burn up the sterilizer; if you turn on electricity in an empty sterilizer you burn up a heater, but you do not injure your sterilizer. You can replace the heater at comparatively small expense, with no serious delay. All of the units of a well-designed outfit are exactly alike and one or two spares may be carried in stock for emergency. Very small sterilizers are made with automatic devices which effectually prevent burnout; but such equipment applied to a large sterilizer would be much too complicated to be practical.

In deciding between gas and electricity the first consideration should be: "Are both supplies dependable?" In many towns the gas supply occasionally gives out or gets so weak that it is impossible to use it successfully at certain periods of the year. If this condition exists or is liable to exist, it will be unwise to equip for gas heating. Similarly, some sources of electric power are not reliable, but this condition, owing to constantly improving apparatus, is becoming rare.

If both gas and electricity are available, dependable and supplied at fair rates, one must weigh the advantages of electricity over gas and consider the first cost and the cost of operation and upkeep.

### First Cost of Electric Sterilizers High

The first cost of the electric outfit installed will be possibly 10 to 20 per cent higher than for a similar gas outfit and the cost of operation will usually be 25 to 50 per cent higher for electricity than for gas. With careful handling, the upkeep should be about the same for either method. This estimate would seem to indicate that electricity is too expensive to be considered, but one must remember the features of cleanliness, actual and apparent, the greater speed in working and the fact that burnouts will leave the electric sterilizer unharmed while burnouts will ruin the gas sterilizer.

The placing of water sterilizers depends largely upon the technique of the institution. Under ordinary circumstances these sterilizers are placed in the sterilizing room at a sufficient height readily to supply water to faucets in the operating room sinks. The obstetrical department and the emergency department ordinarily have separate and smaller units. Many hospitals are installing central water supply systems for sterile water. The tanks for these, of 100-gallon capacity or larger, are placed in the attic. They are operated in much the same manner as ordinary water sterilizers and the water is distributed throughout the institution by gravity. Where installations of this type are made it is necessary, in order to insure sterile water being drawn at the taps or outlets, that all such sterile water lines be in one circuit, using a supply directly beyond the sterile water tank and a return at the extreme end of this line, so that each morning the water may be turned off at the sterile tank and the entire system be thoroughly sterilized by the introduction of live steam. This only requires a few minutes and should not be neglected; otherwise contamination is likely to occur in the pipes. It is well to open up, for a few moments, all of the sterile water faucets on the fixtures; but these should not be left open for any length of time, as the rooms in which the fixtures are placed would have considerable steam blown into them.

### Special Piping Needed

The ordinary piping from the sterilizers to such outlets is not sufficient. All such piping should be either of block tin, cased with lead or iron, or the pipe should be



# CONTROLLING HYPERACIDITY

## *Without Discomfort*

**C**ONTROLLING hyperacidity—preventing acidosis—is now almost a part of the routine work of hospitals, dispensaries and clinics. These agencies exist for the protection of the health of the public and their service contemplates teaching the simple methods of safeguarding against disease.

It seems proper therefore, for the hospital personnel, recognizing that acidosis is the fore-runner of much serious organic trouble, to appreciate the unique service of the original Milk of Magnesia (Phillips).

Frequently acidosis is first recognized when the patient enters the hospital or visits the clinic for diagnosis and treatment of some other ailment. There is usually a history of ill balanced metabolism and a tendency toward constipation. Whatever may be the underlying cause simple corrective treatment here discussed should be considered by those responsible for the treatment and care of patients in hospitals and similar institutions.

Gastric hyperacidity, acidity of the mouth and other of the more obvious manifestations of acidosis are promptly counteracted by Phillips' Milk of Magnesia which has a pronounced affinity for acids, the harmless resultant compounds being readily excreted.

The increasing use of sodium bicarbonate by the public to control "acid stomach" should be considered in this connection. Only a part of the bicarbonate is effective and that portion which produces carbon dioxide may be seriously detrimental.

Phillips' Milk of Magnesia being free from carbonates does not distend the stomach nor cause flatulence of the lower intestinal tract. Its antacid action is pronounced. A given quantity of Phillips' Milk of Magnesia neutralizes almost three times as much acid as a saturated solution of sodium bicarbonate and nearly fifty times as much as lime water. Further it has the additional merit of being laxative, a quality of importance here since constipation is so frequently the underlying cause of hyperacidity.

### DOSAGE

The usual dose of Phillips' Milk of Magnesia, as an antacid, ranges from one teaspoonful (4 c. c.) to one tablespoonful (16 c. c.). This amount should be mixed with an equal portion of cold water or milk and given half an hour after meals.

For its laxative effect, the adult dose is one to two fluid ounces (30 to 60 c. c.). The aperient action may be facilitated by giving the juice of lemon, lime or orange, half an hour thereafter.

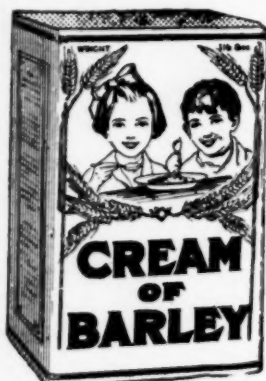
# **PHILLIPS' Milk of Magnesia**

**CAUTION.** Beware of imitations of Phillips' Milk of Magnesia. The genuine product bears our registered trade-mark. Kindly prescribe in original 4-ounce (25c bottles) and 12-ounce (50c bottles) obtainable from druggists everywhere.

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Pudding Is  
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The rich, nutty flavor and high therapeutic value of BARLEY is well known to physicians and dietitians.

CREAM OF BARLEY, carefully milled from the choicest American grain, provides this wholesome, nourishing cereal in a most convenient and appetizing form.

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JOHNSON'S PURE BARLEY FLOUR, an American product, used exclusively by the Chicago Infant Welfare Society, is unsurpassed.



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made of Benedict nickel. These pipes are practically free from deleterious effects through chemical action on the sterile water.

It is, therefore, essential in laying out the architectural plans for a new institution that the necessary pipes, calculated as to their size, position and spacing, be adequately provided. This not only applies to these steam lines, but to the water supplies and waste necessary for both individual units and battery installations.

### Dishwashing Machines as Sterilizers

There are on the market dishwashing machines which if used as directed will sterilize dishes thoroughly, but the chief objection is that these infected dishes as they come from the patient are stacked up and remain around the kitchen; during this time they constitute a source of danger. The advantage of a utensil sterilizer is that dishes are put directly into it without being set on any table or other article of furniture. If the dishes were put into a dishwashing machine immediately after they come from the patient a dishwasher would meet all the requirements.

### Two Small Dressing Sterilizers

In the larger hospitals where a dressing sterilizer of the larger size is contemplated, it is well to consider the installation of two apparatus of smaller sizes, so that uninterrupted service is assured in the event of one of the apparatus not working.

The use of dressing containers (drums) is a very excellent way to sterilize dressings, and an ideal way to keep the materials sterile until they are ready for use. The drums are air-tight and the dressings will remain sterile for an indefinite period.

Care should be taken that the materials for sterilization should not be packed too tightly. Here is one source of possible trouble that one hardly looks for. A bundle of materials to be placed in the dressing sterilizer that is too tightly packed will not always be penetrated throughout in twenty to thirty minutes, with fifteen pounds' pressure. The question of how tightly the dressings should be packed is one to be dealt with by the surgical nurse and assistants. One of the reasons why one Diack control in the same package will fuse and another not, is due in a large measure to the density of the package. The one on the outside will melt and the one in the interior will not. Unquestionably the trouble is to be found here; presence of air in the sterilizing chamber, density of the package to be sterilized, materials of package—these are some of the reasons why at times the Diack sterilizer control will not melt. Under proper guidance and operation properly followed through in a sterilizer in good working condition, the melting of the sterilizer control is one of simple procedure. A sterilizer that will not melt a control in thirty minutes at 250 degrees F. would better be looked into, and some of the possible trouble may be as stated above.

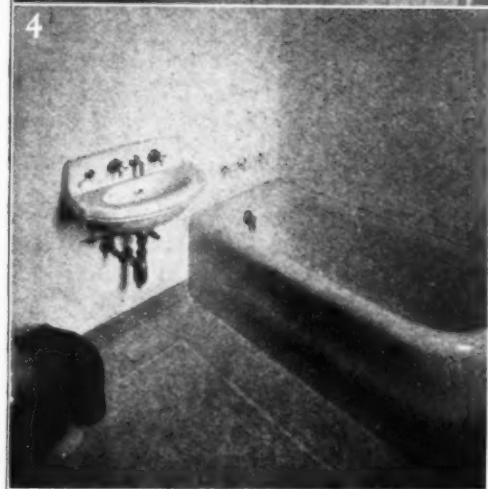
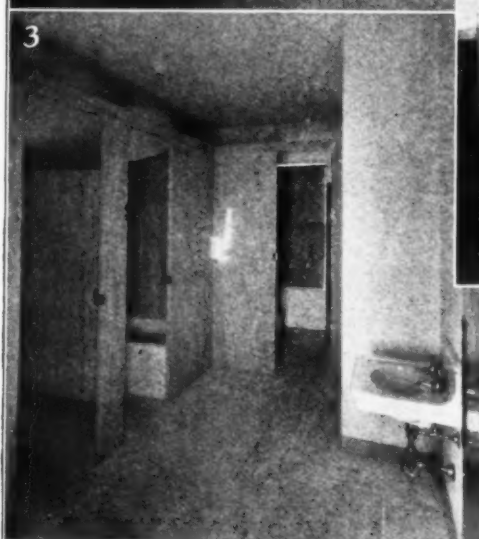
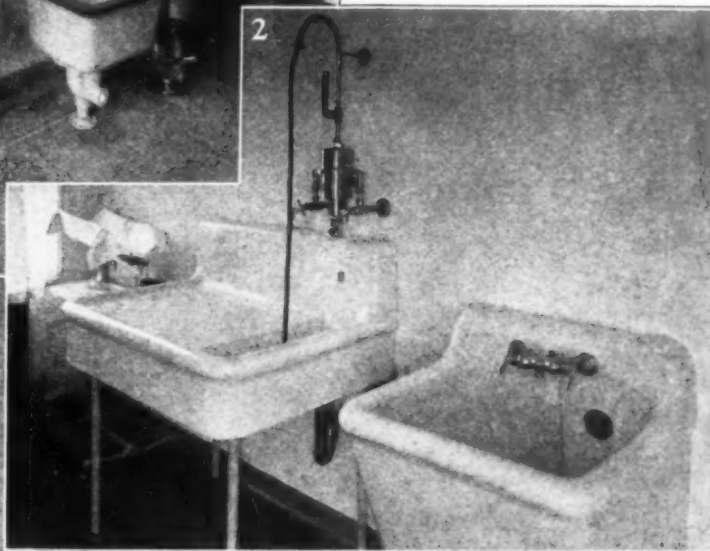
As a matter of interest to hospitals, it may not be amiss to state here that the Diack sterilizer control will fuse, or melt, in ten minutes at 248 degrees F., provided, of course, that the steam strikes the control, that packages are not too tightly wrapped and that the air is eliminated from the chamber, because with steam and air mixed in the same chamber, the temperature is lower than the gauge reading.

Some hospitals waste considerable time in sterilizing for more than thirty minutes after the steam reaches fifteen pounds, because if the control will melt in thirty minutes or less under ideal conditions, which it will, it



Views in St. Lawrence Hospital,  
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1. Equipment Room.
2. Nursery.
3. Nurses' Toilet.
4. Private Bathroom.



## In Every Department

Clow equipment and Clow service cover every department of the hospital. The same standards of conscientious workmanship are upheld in the laundry, kitchen or toilet as in the hydrotherapeutic department. That is why "Clow throughout" inspires confidence in architects and hospital officials.

The views here shown give a partial idea of the quality and variety of Clow plumbing equipment, including Clow marble work.

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**M**ORE and more, every day, modern medicine is seeking prevention, rather than cure. Right in line with this generous ambition lies the work that Kellogg's ALL-BRAN is doing.

Of course, Kellogg's ALL-BRAN relieves constipation. It is in constant use in hospitals, and the doctors and nurses are generous in their praise. They know that it does everything claimed for it. Because it's ALL-BRAN, it does its work—thoroughly.

But Kellogg's ALL-BRAN is equally valuable in preventing constipation. It has the necessary bulk. And, very important, too, it is really appetizing. Patients who are not conscious of the necessity for medicine are willing to take it. Crisp, delicious, cooked and krumbled by the special Kellogg process, Kellogg's ALL-BRAN is a delightful food.

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**What U. S. P.  
is to drugs,  
ALL-BRAN is  
to bran foods.**

Send to Kellogg Company, Battle Creek, Mich., for recipes and health pamphlets.

# Kellogg's

**the original ALL-BRAN  
—ready-to-eat**

would be folly to prolong the sterilization period. In a recent report Diack shows where the thermal death point of all bacterial life varies from twenty-five minutes at 240 degrees F. down to five minutes at approximately the same degree of heat, because authorities differ on the thermal death point of bacterial life, some claiming twenty-five minutes at 248 degrees F. will destroy and completely sterilize all materials, while others do not deem it necessary to go even this far.

## Thermal Death Point

In Diack's report on the relation of time and heat to sterilize completely in the presence of moisture, it is interesting to note the extent to which various authorities differ on the thermal death point of bacteria. The following report gives some idea of the difference of opinion:

Jordan	248 degrees F.	5 min.
Muir & Ritchie	248 degrees F.	7½ min.
Gerard	240 degrees F.	10 min.
Novy	230 degrees F.	15 min.
Eyre	239 degrees F.	15 min.
Beeson	239 degrees F.	20 min.
Sternberg	239 degrees F.	25 min.

Steam heat penetration tests as applied to sterilization, conducted at the University of Wisconsin by Scanlan, Larson and Clark, and the experiments conducted by Diack of Detroit, prove conclusively the necessity of freeing completely the sterilizing chamber of all air and the fallacy of relying upon gauge readings to determine accurate results as to steam penetration (temperature) in the center of bundles of various size and density that are placed in the sterilizing chamber for sterilization.

In order to be absolutely sure, it is necessary, therefore, that bacteriological tests be made of each lot of dressings sterilized, or that each bundle have placed in the interior of the bundle a tablet that will not melt or change color until a temperature sufficient for complete sterilization has reached this tablet.

## Size of Steam Lines

If steam from an auxiliary boiler is to be employed as a heating medium, the boiler should be of the proper type and capacity; the steam supply line from boiler to sterilizing apparatus should be of ample size, and the steam return lines from sterilizing apparatus should be properly trapped, that is, a steam trap placed in the steam return from the battery of sterilizers; or steam traps placed in the steam return lines from the individual sterilizers composing the battery; or a steam trap placed in the steam return main near the boiler, as conditions may indicate.

Properly trapping the steam return lines will remove the condensation from the heating coils of the sterilizing apparatus, thus permitting steam from the boiler to circulate freely through the heating coils of the sterilizers, thereby obtaining the maximum temperature and efficiency of the steam as a heating medium in operating the sterilizers.

In the larger hospitals—having, as they do, an available supply of high pressure steam, and operating batteries of sterilizers and various individual sterilizers, the sterilizers located at different points throughout the building—it is positively essential that in the installation of the heating medium (high pressure steam) the steam supply line, steam return line, water supply line and the water waste line, be not only of proper size and capacity but also properly installed, to insure the efficient operation of the various sterilizers that are installed and taken care of by these lines.

# NEWS!

## for the hospitals



*The new*  
**GORHAM**  
**INSULATOR**  
*is ready*

Shown above is a coffee pot of the Bradford line; below, a tea service. Beautifully designed and heavily plated, they are a credit to the finest hospital; so long lived they represent the *truest economy*.



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THE black dot you see in the illustration shows the new insulator. Not only does it keep the handle cool when the pot itself is piping hot, but it adds strength.

Actual mechanical tests prove the handle made in this way *five times stronger* than any other ordinary insulated handle. The insulator itself is practically unbreakable.

You can see a complete line of pots with the new insulator at our New York show room. Test them, look them over carefully and you will be delighted with this newest Gorham feature.

Details by mail if you prefer.

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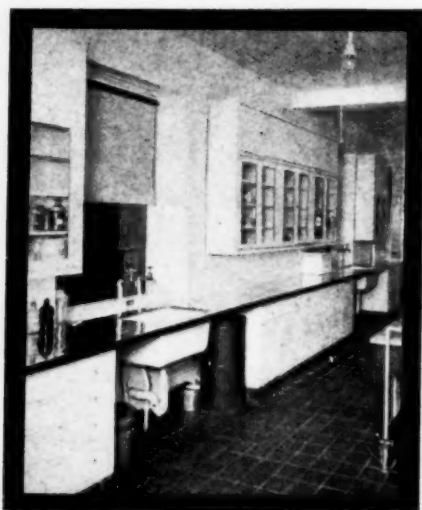
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# The WHITE HOUSE TRADE MARK Line.

## SECTIONAL UNIT STEEL DRESSERS



White House Units in Vassar Bros. Hospital,  
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Architect: W. J. Beardsley.

## Permanently Efficient and Sanitary

**E**VERY WHITE HOUSE unit is fire-proof, moisture-proof, vermin-proof and absolutely sanitary. Baked white enamel surfaces may be cleaned by the wipe of a cloth, or all shelving and drawers may be removed and the whole interior thoroughly cleansed.

Because the entire WHITE HOUSE Line is of the *highest quality* modern rigid steel construction, it perfectly fills the exacting needs of hospitals wherein unusual durability and sanitation are essential. WHITE HOUSE steel construction is rapidly replacing built in wooden cupboards for storing, preparing and serving food. Made in a unit system—fills any space. Catalogue and additional information on request.

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131 West 44th St. NEW YORK, N. Y.

With the sterilizers installed on various floors and in various sections of the building, the individual sterilizers or sterilizing unit should be equipped with a steam trap of approved type and this trap, at intervals, should be inspected and kept free from accumulating sediment.

The steam return main from the sterilizing apparatus should drain into a pit or hot well; the condensation from the pit or hot well being pumped back into the boiler or boilers by means of either a steam or electric pump.

### Need of Powerful Gas Burners

With gas as the heating medium, it is necessary that the gas supply line be of ample capacity and that the gas burners be powerful and of an improved type, insuring perfect combustion. With electricity as the heating medium, it is necessary to comply with the building code of the town or state in which the hospital is located and with the insurance underwriter's requirements. The power line supplying current to the electrical heating units must be of sufficient size to carry the maximum amount of current required and should be run in a conduit to a properly wired and constructed fuse box.

The steam supply line and steam return line, where they enter the sterilizing room, should be fitted with valves for shutting them off (if it at any time becomes necessary). The steam supply line in the sterilizing room should be fitted with a steam pressure gauge. With the gauge registering pressure in the steam supply line, the nurse operating the sterilizers can, by looking at the gauge, instantly determine the steam pressure available for heating the sterilizers.

### Importance of Sterilizing Draw Off Taps

The draw off taps on the sterilizer tank should, at intervals, be flushed with boiling water from the tanks. This should be done at least once a day, before the water is allowed to cool, and before sterile water is drawn from the tanks. The draw off taps, unless kept sterile by flushing, are a means of refertilization and the sterile water, when drawn off at these taps, will, in passing through the unsterile taps, become refertilized.

Typical sterilizing equipment required in an average 100-bed general hospital is as follows:

Two dressing sterilizers 16x36 with automatic control valves, 16 drums and 1 3-drum stand for each operating room.

One pair of water sterilizers, 50-gallon capacity, each tank with 6-gallon capacity distilled water attachment.

Instrument sterilizers 9x12x22, one for each operating room.

Utensil sterilizers 20x20x24 mechanical lift, one for each operating room.

One saline solution sterilizer.

One blanket warmer 20x24x72.

Maternity department sterilizing rooms—

One pair water sterilizers, 10-gallon capacity each tank.

One utensil sterilizer 20x20x24.

Dressing rooms—

One pair water sterilizers, 6-gallon capacity each tank.

One instrument sterilizer, electric, 5x6x16.

Duty rooms—

One utensil sterilizer 20x20x24, mechanical lift.

One instrument sterilizer, electric, 5x6x16.

One blanket and bedpan warmer, 20x24x72.

Locker room and mattress storage (or laundry)—

One mattress and clothing sterilizer, rectangular, 42x42x88, steam and formaldehyde.